#### WEST

#### **Create A Case**

Select?	Database	Query	Plural	Op	Thesaurus	Set Name
Ø	USPT	anti-tumor antibody	YES	ADJ	ASSIGNEE	Li`.
Ø	USPT	anti-tumorigenic antibody	YES	ADJ	ASSIGNEE	L2
v	USPT	antibody and anti-tumorigenic activity	YES	ADJ	ASSIGNEE	L3

		**.	
Reset	Create Ca	ase	Cancel
		Main Menu	management learnessmann

#### **Rules for naming Cases**

- Case names can only contain alphanumeric characters including underscore (\_).
- Any other special characters or punctuation characters will be automatically removed prior to saving the case.
- All white space characters will be replaced by an underscore.

```
GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
```

OM protein - protein search, using sw model

July 8, 2003, 16:08:55; Search time 47.5 Seconds Run on:

(without alignments) 53.300 Million cell updates/sec

US-09-824-647-3 96 Title: Perfect score:

1 KKVIAPRRLPDPQILKSDT 19 Sequence:

Gapop 10.0 , Gapext 0.5 BLOSUM62 Scoring table:

908470 seqs, 133250620 residues Searched:

908470 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Database :

/SIDS2/gcgdata/geneseq/geneseqp-emb1/AA2001.DAT: /SIDS2/gcgdata/geneseq/geneseqp-emb1/AA2002.DAT: /SIDS2/gcgdata/geneseg/genesegp-emb1/AA2000.DAT /qcqdata/qeneseq/qeneseqp-emb1/AA1998.DAT /gcgdata/geneseq/geneseqp-embl/AA1980.DAT /gcgdata/geneseg/genesegp /SIDS2/gcgdata/geneseg/ 'qcqdata/qenesed A\_Geneseq\_101002:\* SIDS /SIDS2

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

#### SUMMARIES

Description	Mouse GP88 autocri	Mouse epithelin pr	Mouse GP88 autocri	Mouse granulin/epi	Rat epithelin prec	Novel human diagno	Human ADAM8. Homo	Human PRO1686 poly	Human GP88 autocri	Human calpastatin
ID	AAW85478	AAR14327	AAW85474	AAE20520	AAR14325	ABG07964	AAB20251	AAU86156	AAW85480	AAW18298
% Query Match Length DB	19 20	589 12	589 20	589 23	589 12	650 22	824 22	824 23	19 20	29 18
& Query Match 1	100.0	100.0	92.7	92.7	64.6	49.0	47.9	47.9	45.8	45.8
Score	96	96	89	83	62	47	46	46	44	44
Result No.	П	7	æ	4	S	9	7	8	σ	10

protein se calpastati	Human epithelin pr Granulin sequence.	Human GP88 autocri	Human granulin/epi	н			Ø	Arabidopsis thalla	Propionibacterium		Human POLY2 protei	POLY	Amino acid sequenc	Human cardiac myos	Human kinase PKIN-	Human POLY4 protei	Human protein kina	Drosophila melanog	Propionibacterium	Novel human diagno		Novel human diagno	Drosophila melanog	Novel human diagno	Amino acid sequenc	₩.		Novel human diagno				
													:																			
04	wω	ر ا			4	3	7	æ	m	~	œ	6			7	80	0	0			_	6	0	4	0	'n	ı,	ب	8	7	7	
AAB94550 AAW19394	AAR14326 AAR48673	AAW8547	<b>AAE20521</b>	AAB4397	AAG16784	AAG1678	AAG16782	AAG55018	AAU5858;	AAE16337	AAE1633	AAE1633	AAG6754	AAE22723	AAE22847	AAE22848	<b>AAE22849</b>	AAE22850	<b>AAE16260</b>	AAE16340	AAU03521	ABB6913	AAU5847	ABG24494	ABP47810	ABG15125	ABB66015	ABG20636	AAG67388	AAE0217	ABP4776	ABG1512
AAB	AAR	AAW	AAE	AAB	AAG	AAG	AAG	AAG	AAU	AAE	AAE	AAE	AAG	AAE	AAU	ABB	AAU	ABG	ABP	ABG	ABB	ABG	AAG	AAE	ABP	ABG						
22 18	12	20	23	21	21	21	21	21	22	23	23	23	22	23	23	23	23	23	23	23	22	22	22	22	23	22	22	22	22	22	23	22
413	593 593	593	593	621	108	131	142	148	154	595	595	595	969	969	969	296	296	969	969	969	612	692	57	97	97	255	298	321	416	416	440	501
																				/	. *		•									
	45.8		45.8		٠	٠	٠	44.8	44.8	44.8	44.8						•		44:8		44.8	44.8					43.8	٠	•		43.8	43.8
<b>ਹ</b>	4 4		4	. 7	m.	m	m	٠ ٣	6	 	m		m	9	m	3	e	3	e	3	3	3	7	7	7	7	7	7	7	7	7	7
44	44	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
42	w 4	ر ا	9	7	80	19	0	-	7	3	4	2	9	7	8	6	0	31	7	9	4		. 9	7	8	6	0	-	2	9	4	2
		-	1	7	Н	1	7	7	. 2	8	7	7	7	7	7	7	e	úι	m	 w	c	٣	e	e	e	m	4	4	4	4	4	4
																			•									•				

## ALIGNMENTS

```
AAW85478 standard; Peptide; 19 AA.
                                                                               15-MAR-1999 (first entry)
                                        AAW85478;
```

RESULT 1 AAW85478

Mouse GP88 autocrine growth factor antigenic peptide K19T.

GP88; granulin; epithilin; mouse; growth factor; autocrine; tumour; cancer; viral infection; antagonist; therapy; diagnosis; antigen; antibody.

;

Mus sp.

WO9852607-A1

26-NOV-1998.

98WO-US10555. 22-MAY-1998; 97US-0991862. 97US-0863079. 16-DEC-1997; 23-MAY-1997;

(SERR/) SERRERO G.

Serrero G;

WPI; 1999-045276/04.

Composition containing antagonist of growth factor GP08 - useful for treating cancer and viral diseases and also for diagnosing disease

```
ET-1 is a bifunctional growth regulator, capable of stimulating the growth of some cell types while inhibiting the growth of others. ET-2 is functionally similar to ET-1 w.r.t. growth inhibitory bioactivity. In contrast, however, ET-2 is apparently not capable of eliciting the growth stimulatory activity characteristic of ET-1 and, in fact, artagonises this ET-1 activity. See also AAQ14338-40, AAQ14952-53, AAR14328-9 and AAR15315-20.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              344.362
/note= "K19T peptide, used to raise antibody"
562.575
/note= "S14R peptide, used to raise antibody"
                                                                                                                                                                                                                         New cysteine-rich growth modulating proteins, epithelins - us as inhibitors of neoplastic cell growth and to promote wound healing and treat psoriasis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note= "P12T peptide used to raise antibody"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GP88; granulin; epithilin; mouse; growth factor; autocr. cancer; viral infection; antagonist; therapy; diagnosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              100.0%; Score 96; DB 12; 100.0%; Pred. No. 1.4e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    note- "encoded by CTG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note= "encoded by AGC"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note- "encoded by TGA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mouse GP88 autocrine growth factor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ¥.
                                                                                                                                                                                                                                                                                                           Disclosure; Fig 23; 97pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       344 KKVIAPRRLPDPQILKSDT 362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAW85474 standard; Protein; 589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 KKVIAPRRLPDPQILKSDT 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         98WO-US10555.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                97US-0991862.
97US-0863079.
                                                                               (BRIM ) BRISTOL-MYERS SQUIB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       208..219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                  Shoyab M, Plowman GD;
                                                                                                                                                               WPI; 1991-325168/44.
N-PSDB; AAQ14340.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity
nes 19; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       589 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Misc-difference 54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO9852607-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         22-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                16-DEC-1997;
23-MAY-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           15-MAR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   26-NOV-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAW85474;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Seguence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mus sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                               This is the amino acid sequence of peptide K19T, comprising amino-
scid residues K344-T362 of murine GP88 (see AAW8574). GP88 is an
kDa glycoprotein autocrine growth factor that is expressed in a
tightly regulated manner in normal cells, is overexpressed and
                                                                                                                                                             unrequiated in highly tumorigenic cells derived from normal cells, and which acts as a stringently required growth stimulator for the tumorigenic cells. K19T was used to raise neutralising antibodies to GP88. Antagonists to GP88, such as anti-GP88 antibodies, are used to treat diseases associated with increased expression of GP88, particularly cancer but also viral infections. Anti-GP88
                                                                                                                                                                                                                                                                                       antibodies can also be used as diagnostic reagents and to deliver toxins or other compounds to GP88-expressing cells.
                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                        Length 19;
                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                          100.0%; Score 96; DB 20; 100.0%; Pred. No. 3.9e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ET; growth regulation; inhibition; stimulation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                label precursor
/note= "claim 21, page 55"
                                                                                                                                                                                                                                                                                                                                                                                                                                     0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      280..335
/label- EP-1
/note- "claim 22, page 55"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /label- EP
/note= "claim 27, page 56"
515..570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /label= EP
/note= "claim 28, page 56"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                page 55"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     page 56"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 'label- EP
'note- "claim 25, page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "claim 24, page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAR14327 standard; Protein; 589 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /label- EP-2
/note- "claim 23,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                note- "claim 26,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 KKVIAPRRLPDPQILKSDT 19
from altered GP88 expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      91WO-US02321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 'label- EP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mouse epithelin precursor.
                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity 100.
Matches 19; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      label-
                                                                                                                                                                                                                                                                                                                                                   19 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            17-JAN-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   03-APR-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Aus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             17-0CT-1991.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WO9115510-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAR14327;
                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Peptide
```

AAR1432

à q ö

Indels

us-09-824-647-3.rag

```
15-JUN-2001; 2001US-0880842
                                                                                                                                        WPI; 2002-267529/31.
N-PSDB; AAD32849.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                589 AA;
                                                                                        (SERR/) SERRERO G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rattus rattus.
                                                  23-MAY-1997;
08-DEC-1999;
 28-FEB-2002
                                                                                                                 Serrero G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAR14325;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                          protein:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAR14325
 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mouse; granulin precursor; GP88; cytostatic; tumourigenicity; tamoxifen;
antineoplastic; antioestrogen therapy; skin cancer.
                                                                                                                                                                                        glycoprotein autocrine growth factor and epithilin/granulin precursor that is expressed in a tightly regulated manner in normal cells, is overexpressed and unregulated in highly tumorigenic cells derived from normal cells, and which acts as a stringenily required growth stimulator for the tumorigenic cells. Inhibition of GPBB expression or action in the tumorigenic cells. Inhibition of the tumorigenic properties of the overproducing inhibition of the tumorigenic properties of the overproducing cells. Murine GPBB CDNA (see AAVB2824) was obtained from the highly tumorigenic properties of the overproducing culls. Antagonists to GPBB are used to treat cancer but also viral infections. Fragments of GPBB are used to
                                                                                                  Composition containing antagonist of growth factor GP88 - useful for treating cancer and viral diseases and also for diagnosing disease from altered GP88 expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note- "Regions used as antigens to raise anti-GP88 antibodies"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         562..575
/note= "Regions used as antigens to raise anti-GP88
antibodies"
                                                                                                                                                                                                                                                                                                                                               reagents and for delivering toxins or other compounds to GP88-expressing cells) and to screen for antibodies. Methods are provided for diagnosing disease, or determining susceptibility disease, resulting from altered GP88 activity.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                       cancer but also viral infections. Fragments of GPBB are used raise specific antibodies (used as antagonists, as diagnostic
                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 589;
                                                                                                                                                                              This is the amino acid sequence of murine GP88, an 88 kDa
                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 89; DB 20; Length 58
Pred. No. 1.7e-05;
0; Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mouse granulin/epithelin precursor (GP88) protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /hote- "Encoded by ACA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /label=_Unknown
/note=_"Encoded by ATG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAE20520 standard; Protein; 589 AA.
                                                                                                                                                    Example 5; Fig 8A-D; 86pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       344 KKVIAPLRLPDPQILKSDT 362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 KKVIAPRRLPDPQILKSDT 19
                                                                                                                                                                                                                                                                                                                                                                                                                                       92.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 92.7
Best Local Similarity 94.7
Matches 18; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ..362
                                                             WPI; 1999-045276/04.
N-PSDB; AAV82824.
                                                                                                                                                                                                                                                                                                                                                                                                              589 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Misc-difference
            (SERR/) SERRERO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US2002025543-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-JUL-2002
                                     Serrero G;
                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAE20520;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mus ap.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 4
ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
```

```
The invention relates to a method for diagnosing tumourigenicity in a human. The method comprises obtaining a biological sample containing cells from the patient, detecting GPBB in the cells of the sample, and determining the number of GPBB positive cells in the sample, and determining the ratio of GPBB positive cells to the total number of cells in the sample, the invention also relates to a method for determining if a human patient is resistent to the antinocplastic effects of antioestrogen therapy. The method is useful for diagnosing tumourigenicity in a sample, such as blood, serum, plasma, unine, nipple aspirate, cerebrospinal fluid, liver, kidney, breast, bone, brain, lung, colon, or skin cancer. The method can be used to treat or prevent re-occurrence of cancer in a patient, by administering tamoxifien if the sample contains less than 10 % GPBB, or less than 5 % GPBB positive
                                                                                                                                                                                                                                                                                        Diagnosing tumorigenicity in a human, comprising obtaining a cell sample, detecting GPB8 in the cells, and determining the number of GPB8 positive cells in the sample
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 89; DB 23; Length 589;
Pred. No. 1.7e-05;
0; Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ET; growth regulation; inhibition; stimulation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     page 54"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note-
280..335
/label= EP-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAR14325 standard; Protein; 589 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /label= EP-2
/note= "claim 13,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /label- precursor
/note- "claim 11,
                                                                                                                                                                                                                                                                                                                                                                                                              Disclosure, Fig 8; 50pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 KKVIAPRRLPDPQILKSDT 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          92.7%;
94.7%;
970S-0863079.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   59..114
/label= EP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       17-JAN-1992 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity 94.7
Matches 18; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rat epithelin precursor.
```

```
for identifying expressed genes. (I) is useful in gene therapy techniques for estore normal activity of (II) or to treat disease states involving (II). (II) is useful for generating antibodies against it, detecting or quantitating a polypeptide in tissue, as molecular weight markers and as a food supplement. (II) and its binding partners are useful in medical imaging of sites expressing (II). (II) and (II) are useful for treating disorders involving aberrant protein expression or biological activity. The polypeptide and polymucleotide sequences have applications in diagnostics, forensics, gene mapping, identification of mutations responsible for genetic disorders or other traits to assess biodiversity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Note: The sequence data for this patent did not appear in the printed specification, but was obtained in electronic format directly from WIPO at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         polypeptide (II) sequences. (I) is useful as hybridisation probes, polymerase chain reaction (PCR) primers, oligomers, and for chromosome and gene mapping, and in recombinant production of (II). The polymucleotides are also used in diagnostics as expressed sequence tags
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                and to produce other types of data and products dependent on DNA and
                                                                                                                                                                                                                                                                                                                                                                     diagnostics, forensics, gene mapping, identification of mutations responsible for genetic disorders or other traits and to assess
                                                                                                                                                                                                                                                                                                                                      polynucleotide and encoded polypeptides, useful in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       amino acid sequences. ABG00010-ABG30377 represent novel human diagnostic amino acid sequences of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADAM8; human; tumour; cancer; therapy; diagnosis; antitumour
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The invention relates to isolated polynucleotide (I) and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  d. No. 60;
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 20; SEQ ID No 38323; 103pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 47;
Pred. No. (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAB20251 standard; Protein; 824 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      49.0%;
                                                                                                                                                                                                          Tang YT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   27-JUL-2000; 2000WO-US20731
                   30-MAR-2001; 2001WO-US08631
                                                                       31-MAR-2000; 2000US-0540217
23-AUG-2000; 2000US-0649167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ouery Match
Best Local Similarity 66./v
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 :|| ||| ||:|
291 LAPTRLPOPOVL 302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4 IAPRRLPDPQIL 15
                                                                                                                                                                                                                                                           WPI; 2001-639362/73.
N-PSDB; AAS72151.
                                                                                                                                                                                                          Drmanac RT, Liu C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    650 AA;
                                                                                                                                                     (HYSE-) HYSEQ INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WO200109189-A2.
                                                                                                                                                                                                                                                                                                                                         New isolated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             14-MAY-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 08-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Human ADAM8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAB20251;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    윱
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ET-1 is a bifunctional growth regulator, capable of stimusating the growth of others.

ET-2 is functionally similar to ET-1 w.r.t. growth inhibitory

The contrast, however, ET-2 is apparently not capable of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       bioactivity. In contrast, however, ET-2 is apparently not capable of eliciting the growth stimulatory activity characteristic of ET-1 and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human; chromosome mapping; gene mapping; gene therapy; forensic;
food supplement; medical imaging; diagnostic; genetic disorder.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         in fact, antagonises this ET-1 activity.
See also AAQ14338-40, AAQ14952-53, AAR14328-9 and AAR15315-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New cysteine-rich growth modulating proteins, epithelins - us as inhibitors of neoplastic cell growth and to promote wound healing and treat psoriasis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 12; Length 589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 62; DB 1
Pred. No. 0.26;
1; Mismatches
                                                                       page 54"
                                                                                                                                                                                                                                     page 54"
                                                                                                                                                                                                                                                                                       /label= EP
/note= "claim 18, page 55"
"claim 14, page 54"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Novel human diagnostic protein #7955.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ABG07964 standard; Protein; 650 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Disclosure; Fig 18; 97pp; English.
                                                                                                                                                                                                          label EP
note "claim 17,
                                                                       "claim 15,
                                                                                                                            /label= EP
/note= "claim 16,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                344 KKVTASLSLPDPQILKND 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 KKVIAPRRLPDPQILKSD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 64.6%;
Best Local Similarity 72.2%;
Matches 13; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (BRIM ) BRISTOL-MYERS SQUIB.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           91WO-US02321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                910S-0083796
900S-0504508
                                                 'label" EP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            13-FEB-2002 (first entry)
                                                                                                                                                                                                                                                         515..570
                                                                                                                                                                                 40..495
'note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Plowman GD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 1991-325168/44.
N-PSDB; AAQ14338.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO200175067-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           03-APR-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                13-MAR-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         03-APR-1990;
                                                                                                                                                                                                                                                                                                                                                                     W09115510-A
                                                                                                                                                                                                                                                                                                                                                                                                                      17-0CT-1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              11-0CT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Shoyab M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ABG07964;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                           Peptide
                   Peptide
                                                                                                                                                                                                                                                           Peptide
                                                                                                   Peptide
```

PHILL THE LEFT THE SAN X SECOND SAN X SECOND

ö

Gaps

ö

Indels

ABG0796 RESULT

ð 셤

DB 22; Length 650;

Hillan KJ; Stone DM;

190

```
polypeptides and the polynucleotide sequences encoding them. The PRO polypeptides, agonists, antagonists or anti-PRO antibodies are useful for treating benign or malignant tumours (e.g. renal, kidney, bladder, breast, etc), leukaemias and lymphoid malignancles, other disorders such as neuronal, glial, astrocytal, hypothalamic, glandular, macrophagal, stromal and blastocoelic disorders, inflammatory, immune and angiogenic disorders. The polynucleotide sequences are also useful in gene therapy. And 86162 represent the human PRO polypeptides of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ranulin; epithilin; human; growth factor; autocrine; tumour; viral infection; antagonist; therapy; dlagnosis; antigen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The present invention relates to the isolation of novel human PRO
                                                                                                                                                                                                                                                                                                                                                                                                                                                Thirty five nucleic acids encoding PRO polypeptides, useful for treating benign or malignant tumours, leukaemias and lymphoid malignancies, inflammatory, anglogenic and immunologic disorders
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      47.9%; Score 46; DB 23; Length 824;
43.8%; Pred. No. 1.1e+02;
Live 6; Mismatches 3; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human GP88 autocrine growth factor antigenic peptide E19V.
                                                                                                                                                                                                                                                                                  Goddard A, Godowski PJ, Gurney AL,
Pan J, Pitti RM, Roy MA, \ Smith V,
Wood WI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAW85480 standard; Peptide; 19 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 61; Fig 58; 302pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 :|: ||||| |:: ::
30 EVVLPRRLPGPRVRRA 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2 KVIAPRRLPDPQILKS 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 47.9%;
Best Local Similarity 43.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             98WO-US10555.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        97US-0991862
                                                                                                                                        99WO-US21090
99WO-US28313
                                                                                                                                                                                                                         05-JAN-2000; 2000WO-US00219
                                                                              99US-149395P
                                                                                                                                                                                  99WO-US28301
                                                                                                                                                                                                     99WO-US28634
                                                                                                                99WO-US2011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15-MAR-1999 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7; Conservative
                                                                                                                                                                                                                                                             (GETH ) GENÉNTECH INC
                                                                                                                                                                                                                                                                                                                                                                                      WPI; 2002-205967/26.
N-PSDB; ABK40282.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    824 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GP88; granulin;
                                                                                                                                                                                                                                                                                                       Ashkenazi AJ,
                                                                                                                                                                                                                                                                                                                             Marsters SA,
Watanabe CK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             22-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO9852607-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      16-DEC-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       26-NOV-1998.
                                                                                .7-AUG-1999
                                                                                                                       -SEP-1999
                                                                                                                                          .5-SEP-1999
                                                                                                                                                               30-NOV-1999
                                                                                                                                                                                    01-DEC-1999
                                                                                                                                                                                                   01-DEC-1999
                                                                                                 31-AUG-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAW85480;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  antibody.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAW85480
  ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                       The present sequence is that of human ADAM8, a protein containing a metalloprotease and a disintegrin domain. The ADAM8 gene (see Mar30377) is amplified in the genome of cells of certain breast, lung and colon cancers. Such genome of cells of certain breast, the overexpression of the gene product and contributes to the overexpression of the gene product and contributes to the overexpression of the gene product and contributes to the overexpression of the graph sandor treatment or prevention of certain cancers, and acts as a predictor of the prognosis of tumour certain cancers, and acts as a predictor of the prognosis of tumour certain cancers, and acts as a predictor of the prognosis of tumour concessing of cytokines or other chemotactic molecules. Increased which tumour cells invade tissue or form metastases. Targeting such a molecule with an antibody or another molecule that block, thactivates or other will call the plocks, and therefore the over the convent of tissue results in a clinically relevant antitumour therapeutic. ADAM8 polypeptides can be used to raise ADAM8 specific antibodies, and to screen for inhibitor compounds, see the proportion of tissue results.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human; PRO; benign tumour; malignant tumour; lymphoid malignancy;
leukaemia; neuronal disorder; stromal disorder; blastocoelic disorder;
inflammatory disorder; immune disorder; angiogenic disorder;
cytostatic; neuroprotective.
                                                                                                                                                                                Antibodies against ADAM8 polypeptides, useful e.g. for diagnosis and treatment of tumours and inflammation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 824;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    47.9%; Score 46; DB 22; Length 82
43.8%; Pred. No. 1.1e+02;
ive 6; Mismatches 3; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAU86156 standard; Protein; 824 AA.
                                                                                                                                                                                                                                            Disclosure; Page 5; 117pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             : |: ||||| |:: ::
EVVLPRRLPGPRVRRA 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99US-123972P.
99US-133459P.
99WO-US12252.
99US-140650P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2 KVIAPRRLPDPQILKS 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               11-FEB-2000; 2000WO-US03565.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99WO-US05028
99US-0146217.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human PRO1686 polypeptide.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity 43.88
Matches 7; Conservative
                                                                            Bodary SC, Fisher KL;
                                      (GETH ) GENENTECH INC
                                                                                                                  WPI; 2001-182943/18.
                                                                                                                                          N-PSDB; AAF30377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO200153486-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   08-MAR-1999;
11-MAR-1999;
11-MAY-1999;
02-JUN-1999;
22-JUN-1999;
28-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15-JUL-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      26-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAU86156;
```

RESULT 8 AAU86156

ŏ g ö

Gaps

```
The present invention describes primer sets for synthesising 5602 full-length cDNAs defined in the specification. Where a primer set comprises: (a) an oligo-dT primer and an oligonucleotide complementary to the complementary strand of a polynucleotide which comprises one of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           primer sets for synthesizing polynucleotides, particularly the 5602 full-length cDNAs defined in the specification, and for the detection and/or diagnosis of the abnormality of the proteins encoded by the
                                                                                                                            This peptide comprises a B-cell epitope from a calpastatin isoform (see AAM18394) found in human testis and sperm, but not in other tissues. Calpastatin is an inhibitor of the cystelne proteadse calpain. The B-cell epitope, or a shortened B-cell epitope (see AAM19298), can be linked to a carrier comprising a universal T-cell epitope from tetanus foxoid (see AAM18295 and AAM18295) to produce an immunogen (see AAM1830). The B-cell epitope or immunogen can be produced by chemical synthesis or as accombinant peptides in host
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human; primer; detection; diagnosis; antisense therapy; gene therapy.
                                                                                                                                                                                                                                                                                                                             cells. They are useful as contraceptive vaccines that inhibit fertilisation of an egg by sperm. The B-cell epitope can also be used to detect specific antibodies in body fluids, the presence
useful in contraceptive vaccines for males or females, and for diagnosing infertility
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Saito K, Ya
Otsuki T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                              these antibodies being indicative of infertility.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 8; SEQ ID 15310; 2537pp + CD ROM; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 18;
6.8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Isogai T, Nishikawa T, Hayashi K, S
Sugiyama T, Wakamatsu A, Nagai K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 44;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human protein sequence SEQ ID NO:15310.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Æ
                                                                                   Claim 17; Page 68; 86pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAB94550 standard; Protein; 413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           :| ||| |:|:|:|:
EKKHTPRRRPEPKIIPSE 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 KKVIAPRRLPDPQILKSD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 28-JUL-2000; 2000EP-0116126.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          99JP-0300253.
2000JP-0118776.
2000JP-0183767.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 45.8%;
Best Local Similarity 44.4%;
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                29-JUL-1999; 99JP-0248036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                09-JUN-2000; 2000JP-0241899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (HELI-) HELIX RES INST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2001-318749/34.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ull-length cDNAs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EP1074617-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               07-FEB-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           26-JUN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            17-AUG-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              11-JAN-2000;
02-MAY-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAB94550;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ishii S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ota T,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAB94550
ID AAB9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
             Composition containing antagonist of growth factor GPBB - useful for treating cancer and viral diseases and also for diagnosing disease from altered GPBB expression
                                                                                                                                                                                                                                                                                                                                                               comprising amino 175). GP88 is an 88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New testis-specific isoform of calpastatin - and derived immunogens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             immunogen;
                                                                                                                                                                                                                                                                                                                                                          This is the amino acid sequence of peptide E19V, comprising amino acid residues E340°364 of human GP88 (see AAM85475). GP88 is an Eacid residues E340°364 of human GP88 (see AAM85475). GP88 is an Eightly regulated manner in normal cells, is overexpressed and unregulated in highly tumorigenic cells derived from normal cells, and which acts as a stringently required growth stimulator for the tumorigenic cells. E19V was used to raise neutralising antibodies
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              tumorigenic cells. E19V was used to raise neutralising antibodies to GP88. Antagonists to GP88, such as anti-GP88 antibodies, are used to treat diseases associated with increased expression of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GP88, particularly cancer but also viral infections. Anti-GP88 antibodies can also be used as diagnostic reagents and to deliver toxins or other compounds to GP88-expressing cells.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           45.8%; Score 44; DB 20; Length 19; 55.6%; Pred. No. 4.4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      protease inhibitor;
diagnosis; epitope;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pred. No. 4.4;
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Calpastatin; testis; human; calpain; vaccine; contraceptive; infertility; B-cell; B-lymphocyte.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                             Example 8; Page 45; 86pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ¥.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4..17
/note= "Claim 18"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human calpastatin B-cell epitope.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAW18298 standard; Peptide; 29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 KKVIAPRRLPDPQILKSD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EKAPAHLSLPDPQALKRD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            96US-0586592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             97WO-US00908
             23-MAY-1997; 97US-0863079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (NOUN ) UNIV NORTHWESTERN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Weinberg PO;
                                                                                                                                                            WPI; 1999-045276/04.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 1997-385110/35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity
es 10; Conserv
                                                              (SERR/) SERRERO G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             19 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO9726001-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        16-JAN-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            16-JAN-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   03-FEB-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Goldberg E,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            24-JUL-1997
                                                                                                               Serrero G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAW18298;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAW18298
```

g à

Yamamoto J;

ö

Gaps

```
ö
                                                                                                                                   polynucleotide which comprises a 3'-end sequence, where the oligonucleotide comprises at least 15 nucleotides and the combination of the 5'-end sequence/3'-end sequence is selected from those defined in the specification. The primer sets can be used in antisense therapy and in gene therapy. The primers are useful for synthesising polynucleotides, particularly full-length cDNAs. The primers are also useful for the detection and/or diagnosis of the abnormality of the proteins encoded by the full-length cDNAs. The primers allow obtaining of the full-length cDNAs as allow obtaining of the full-length cDNAs and AMH13613 to AMH13612 and AMH13613 to AMH13612 encoded by antised methods. AMH13613 to AM
the 5602 nucleotide sequences defined in the specification, where the oligonucleotide comprises at least 15 nucleotides; or (b) a combination of an oligonucleotide comprising a sequence complementary to the complementary strand of a polynucleotide which comprises a 5'-end sequence and an oligonucleotide comprising a sequence complementary to a
                                                                                                                                                                                                                                                                                                                                                                                                      AB95893 represent human amino acid sequences, and AAH13629 to AAH13632 epresent oligonuclectides, all of which are used in the exemplification
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                New testis-specific isoform of calpastatin - and derived immunogens, useful in contraceptive vaccines for males or females, and for diagnosing infertility
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Calpastatin; testis; human; calpain; protease inhibitor; immunogen; vaccine; contraceptive; infertility; diagnosis; epitope.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This polypeptide comprises an isoform of human calpastatin found
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 44; DB 22; Length 413;
Pred. No. 1.18+02;
1; Mismatches 7; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       426..454
/note= "B-cell epitope (Claim 17)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note= "B cell epitope (Claim 18)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Example 16; Page 39-41; 86pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human calpastatin (clone C-2 product).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAW19394 standard; Protein; 463 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 KKVIAPRRLPDPQILKSD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  45.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   96US-0586592.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              97WO-US00908.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (NOUN ) UNIV NORTHWESTERN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ..443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Weinberg PO;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           of the present invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 1997-385110/35.
N-PSDB; AAT72643.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   413 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WO9726001-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 16-JAN-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   16-JAN-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Soldberg E,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 03-FEB-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4-JUL-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAW19394;
                                                                                                                                                                                                                                                                                                                                                                                                           AAB95893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Key
Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pept 1de
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAW19394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              888888888888888888888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
```

```
Gaps
in sperm and testis but not in other tissues. It can be produced in transformed host cells using isolated cDNA clone C-2 (see AAT72643).

A B-cell epitope (see AAW18288-99) of this calpastatin isoform can be used to prepare an immunogen (see AAW18300) useful as a male or female contraceptive vaccine that inhibits egg fertilisation. The protein and B-cell epitope can also be used in methods for detecting specific antibodies in body fluids, the presence of these antibodies being indicative of infertility.
                                                                                                                                                        ö
                                                                                                                                  Length 463;
                                                                                                                                                        Indels
                                                                                                                     Score 44; DB 18; LA
Pred. No. 1.2e+02;
                                                                                                                                                                                                                                                                                                                                                                 ET; growth regulation; inhibition; stimulation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /label= precursor
/note= "claim 1, page 53"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /label= EP
/note= "claim 8, page 55"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        note= "claim 2, page 53"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "claim 3, page 53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      note- "claim 7, page 53'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "claim 4, page 53
                                                                                                                                                                                                                                                                                                                                                                                                                .ocation/Qualifiers
                                                                                                                                                                                                                                                                    AAR14326 standard, Protein; 593 AA
                                                                                                                                                                                              5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         . EP
                                                                                                                                                                                1 KKVIAPRRLPDPQILKSD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                82..337
label= EP-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  06..262
|abel= EP-2
                                                                                                                                  45.8%;
                                                                                                                                             Best Local Similarity 44.4%;
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         91US-0083796
90US-0504508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (BRIM.) BRISTOL-MYERS SQUIB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9..114
label = EP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            label- EP
                                                                                                                                                                                                                                                                                                                  17-JAN-1992 (first entry)
                                                                                                                                                                                                                                                                                                                                           Human epithelin precursor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  519..574
/label= E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             note=
                                                                                                            463 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         13-MAR-1991;
03-APR-1990;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  03-APR-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO9115510-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17-0CT-1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Shoyab M,
                                                                                                                                                                                                        431
                                                                                                              Sednence
                                                                                                                                                                                                                                                                                            AAR14326;
                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                             Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Peptide
                                                                                                                                                                                                                                            RESULT 13
                                                                                                                                                                                                                                                        AAR14326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     888888888
                                                                                                                                                                                                        d
                                                                                                                                                                                   ò
```

Gaps

ö

Length 593; Indels

Score 44; DB 14; Lk Pred. No. 1.6e+02;

1;

```
GP88; granulin; epithilin; human; growth factor; autocrine; tumour; cancer; viral infection; antagonist; therapy; diagnosis.
                                                                                                                                                                                                                                                                                                                                                                   340..364
/note= "El9V peptide used to raise antibody"
566..579
                                                                                                                                                                                                                                                                                                                                                                                                            /note= "A14R peptide used to raise antibody"
                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                        Human GP88 autocrine growth factor.
                                                                                                                                                                     AAW85475 standard; Protein; 593 AA
                                                                                     346 EKAPAHLSLPDPQALKRD 363
                                                                     1 KKVIAPRRLPDPQILKSD 18
             45.8%;
nilarity 55.6%;
Conservative 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             98WO-US10555.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       970S-0991862.
970S-0863079.
                                                                                                                                                                                                                            (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 1999-045276/04.
               Query Match
Best Local Similarity
Matches 10; Conservi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (SERR/) SERRERO G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        593 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      N-PSDB; AAV82825
                                                                                                                                                                                                                                                                                                                            Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                        WO9852607-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      23-MAY-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             22-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16-DEC-1997;
                                                                                                                                                                                                                            15-MAR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6-NOV-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Serrero G;
                                                                                                                                                                                                 AAW85475;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                     Peptide
                                                                                                                                                                                                                                                                                                                                                                                                Peptide
                                                                                                                                         RESULT 15
                                                                                                                                                       AAW85475
                                                                                               셤
                                                                                                                                                                                                                                                                                                  ö
                                                                                                                         ET-1 is a bifunctional growth regulator, capable of stimulating the growth of some cell types while inhibiting the growth of others. ET-2 is functionally similar to ET-1 w.r.t. growth inhibitory bioactivity. In contrast, however, ET-2 is apparently not capable of eliciting the growth stimulatory activity characteristic of ET-1 and, in fact, antagonises this ET-1 activity.

See also AAQ14338-40, AAQ14952-53, AAR14328-9 and AAR15315-20.
                                                                                                                                                                                                                                                                                                  Gaps
                                        New cysteine-rich growth modulating proteins, epithelins - useful as inhibitors of neoplastic cell growth and to promote wound healing and treat psoriasis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        granulin inhibits keratinocytes and is useful in formulations promoting the healing of wounds.
                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Granulin; keratinocytes; wound healing; inhibition; peptide;
                                                                                                                                                                                                                                                                 Score 44; DB 12; Length 593;
Pred. No. 1.6e+02;
1; Mismatches 7; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     New cystine rich granulin peptide(s) from leucocyte(s) – an
keratinocyte inhibitors useful topically for wound healing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note- "Glycine encoded by CAG."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 'note= "Valine encoded by ATG."
                                                                                                                                                                                                                                                                                               1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Disclosure; Figure 4c; 53pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                         AAR48673 standard; Protein; 593 AA.
                                                                                                 Disclosure; Fig 22; 97pp; English.
                                                                                                                                                                                                                                                                                                                                           18
                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity 55.6%;
Matches 10; Conservative
                                                                                                                                                                                                                                                                                                                            1 KKVIAPRRLPDPQILKSD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 92WO-CA00089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           92US-0829233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             22-APR-1994 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    granulocytes; leucocytes.
WPI; 1991-325168/44.
N-PSDB; AAQ14339.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 1993-320328/40.
                                                                                                                                                                                                                                        593 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŝ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Granulin sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N-PSDB; AAQ49052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (SOLO/) SOLOMON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 28-FEB-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           03-FEB-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      05-AUG-1993.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            W09315195-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Solomon S;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAR48673;
                                                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                            AAR4867.
ID AAI
                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
  ð
```

```
Composition containing antagonist of growth factor GP88 - useful for treating cancer and viral diseases and also for diagnosing disease from altered GP88 expression
                                                                                                                                                                                                                                                                                                                                  This is the amino acid sequence of human GP88, an 88 kDa glycoprotein autocrine growth factor and epithilin/granulin precursor that is expressed in a tightly regulated manner in normal cells, is overexpressed and unrequiated in highly tumorigenic cells derived from normal cells, and which acts as a stringently required growth stimulator for the tumorigenic cells. Inhibition of GP88 expression or action in the tumorigenic cells results in an inhibition of the tumorigenic properties of the overproducing cells. Antegonists to GP88 are used to treat diseases associated with increased expression of GP88, particularly cancer but also viral infections. Fragments of GP88 are used to raise specific
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     antibodies (used as antagonists, as diagnostic reagents and for delivering toxins or other compounds to G988-expressing cells) and to screen for antibodies. Methods are provided for diagnosing disease, or determining susceptibility to disease, resulting from
                                                                                                                                                                                                                                    Example 5; Fig 9A; 86pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                altered GP88 activity.
```

Length 593;

DB 20;

45.8%; Score 44;

0; Gaps Best Local Similarity 55.6%; Pred. No. 1.6e+02; Matches 10; Conservative 1; Mismatches 7; Indels

; 0

1 KKVIAPRRLPDPQILKSD 18 :| | | ||||| ||| 346 EKAPAHLSLPDPQALKRD 363

q

Search completed: July 8, 2003, 16:24:13 Job time: 49.5 secs

Appli Appl Appli pp11

Sequence 8 Sequence 6 Sequence 6 Sequence 6 Sequence 5 Sequence 2 Sequence 2 Sequence 2 Sequence 2 Sequence 6 Sequence 6

US-08-790-186A-4 US-08-975-762-69 US-09-295-028-69

ALIGNMENTS

```
GENERAL INFORMATION:
APPLICANT: Serrero, Ginette
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE REPRENEUR: 29996.488/P001.A
CURRENT APPLICATION NUMBER: US/08/991,862
CURRENT FILING DATE: 1998-08-17
EARLIER APPLICATION NUMBER: 08/863,862
EARLIER FILING DATE: 1997-05-23
NUMBER OF SEQ ID NOS: 17
SOFTWARE: PATENTIN VET. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LOCATION: (1)..(19) contains the contains of mouse GP88 used to raise the CYHER INFORMATION: Internal against the GP88 used in the OTHER INFORMATION: immunoaffinity step.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GENERAL INFORMATION:
APPLICANT: Shoyab, Mohammed
APPLICANT: Blowman, Gregory D.
TITLE OF INVENTION: EPITHELINS: NOVEL CYSTEINE-RICH GROWTH
TITLE OF INVENTION: MODULATING PROTEINS
NUMBER OF SEQUENCES: 12
CORRESPONDENCE ADDRESS:
ADDRESSE: Pennie & Edmonds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 96; DB 4; Length 19;
Pred. No. 1.3e-09;
0; Mismatches 0; Indels
US-09-152-060-84

US-08-597-236-6

US-08-46-517-6

US-08-46-772-6

PCT-US93-05000-6

US-08-46-517-23

US-08-246-361A-23

US-08-246-361A-23

US-08-246-361A-23

US-08-246-361A-23

US-08-36-361A-23

US-09-335-529

US-09-335-536-29

US-09-336-216-0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       E: Pennie & Edmonds
1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-07-668-648-6; Sequence 6, Application US/07668648; Patent No. 5416192
                                                                                                                                                                                                                                                                                              Sequence 3, Application US/08991862, Patent No. 6309826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 KKVIAPRRLPDPQILKSDT 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 100.0%;
Best Local Similarity 100.0%;
Matches 19; Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQ ID NO 3
LENGTH: 19
TYPE: PRT
ORGANISM: mouse granulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                New York
                                   FEATURE:
NAME/KEY: PEPTIDE
                                                                                                                                                                                                                                                                                   1-862-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STREET:
  CITY:
STATE:
                                                                                                                                                                                                                                                                                     us-08-991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 2
  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ^ppli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Appli
                                                                             8, 2003, 16:21:00 ; Search time 11.6923 Seconds (without alignments) 47.812 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                       Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                       /cgn2_6/ptodata/1/laa/5A_COMB.pep:*
/cgn2_6/ptodata/1/laa/5B_COMB.pep:*
/cgn2_6/ptodata/1/laa/6B_COMB.pep:*
/cgn2_6/ptodata/1/laa/6B_COMB.pep:*
/cgn2_6/ptodata/1/laa/PCTUS_COMB.pep:*
/cgn2_6/ptodata/1/laa/PCTUS_COMB.pep:*
             GenCore version 5:1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                     Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -08-991-862-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-08-429-998-2
US-08-431-333-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-08-991-862-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      08-431-333-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -08-991-862-2
                                                                                                                                                                                                               262574 seqs, 29422922 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SUMMARIES
                                                                                                                                                                                                                                                                                              Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

    protein search, using sw model

                                                                                                                                                     1 KKVIAPRRLPDPQILKSDT 19
                                                                                                                                                                             BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                              Issued_Patents_AA:*
                                                                                                                                                                                                                                                             Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query
Match Length DB
                                                                                                                         US-09-824-647-3
96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100.0
100.0
100.0
100.0
                                                                                  July
                                                                                                                              Title:
Perfect score:
                                                                                                                                                                              Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Database:
                                                          OM protein
                                                                                                                                                     Sequence:
                                                                                                                                                                                                               Searched:
                                                                                  Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Result
No.
```

ö

Gaps

```
Length 589;
                                                                                                                                                                                                                                                                                                                                                                    Sequence 6, Application US/08431333
Patent No. 5965723
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Showman, Gregory D.
TITLE OF INVENTION: MODULATING PROTEINS
TITLE OF SEQUENCES: 12
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/431,333
FILING DATE: 27-APR-1995
CLASSIFICATION: 536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 100.0%; Score 96; DB.2; 1
Best Local Similarity 100.0%; Pred. No. 6.3e-08;
Matches 19; Conservative 0; Mismatches 0;
                                                                                                                                                   6.3e-08;
                                                                                                                            Query Match 100.0%; Score 96; Best Local Similarity 100.0%; Pred. No. 6 Matches 19; Conservative 0; Mismatche
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME: Misrock, S. Leslie
REGISTRATION NUMBER: 18,872
REFERENCE/DOCKET NUMBER: 5624-161-999
TELECOMUNICATION INFORMATION:
TELEPHONE: (212)790-9090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADDRESSEE: Pennie & Edmonds
STREET: 1155 Avenue of the Americas
CITY: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/668,648
FILING DATE: 13-WAR-1991
ATTORNEY/AGENT INFORWATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
CMMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 6, Application PC/TUS9102321 GENERAL INFORMATION: APPLICANT: Shoyab, Mohammed
                                                                                                                                                                                                                                            1 KKVIAPRRLPDPQILKSDT 19
                                                                                                                                                                                                                     1 KKVIAPRRLPDPQILKSDT 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEFAX: (212) 869-9741
INFORMATION FOR SEQ ID NO: (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    : 589 amino acids
amino acid
: 589 amino acids
amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; MOLECULE TYPE: protein US-08-431-333-6
                                                             MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     New York
                                           TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PCT-US91-02321-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COUNTRY:
                                                                                                                                                                                                                                                                                                                                                  US-08-431-333-6
                                                                                      US-08-429-998-6
                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 6, Application US/08429998
| Patent No. 588561
| GENERAL INFORMATION:
| APPLICANT: Shoyab, Mohammed | APPLICANT: Plowman, Gregory D. | TITLE OF INVENTION: EDITHELINS: NOVEL CYSTEINE-RICH GROWTH | TITLE OF INVENTION: MODULATING PROTEINS | NUMBER OF SEQUENCES: 12 | CORRESPONDENCE S. 12 | CORRESPONDENCE PENDIGE & Edmonds | STREET: 1155 Avenue of the Americas | CITY: New York | CITY: New York | COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CORDUTER: IBM PC compatible
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/429,998
FLING DATE: 27-APR-1995
CLASSIFICATION NUMBER: US 07/668,648
PILING DATE: 13-AAR-1991
APPLICATION NUMBER: US 07/668,648
FILING DATE: 13-AAR-1991
ATSTRATION NUMBER: 18,872
REGISTRATION NUMBER: 18,872
REGISTRATION NUMBER: 5624-161-999
TELECOMMULCATION INFORMATION:
NAME: MASTOCK S. Lessie
REGISTRATION NUMBER: 5624-161-999
TELECOMMULCATION INFORMATION:
TELECOMMULCATION INFORMATION:
                                                                                                                               SOFTWARE: Patentin Release #1.0, Version #1.25
SURRENT APPLICATION DATA:
US/O7/668,648
PILING DATE: 19910819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 100.0%; Score 96; DB 1; Best Local Similarity 100.0%; Pred. No. 6.3e-08; Matches 19; Conservative 0; Mismatches 0;
                                                                                                                                                                                                            CLASSIFICATION: 514
ATTORNET/AGENT INFORMATION:
NAME: Misrock, S. Leslie
REGISTRATION NUMBER: 18,872
REFERENCE/DOCKET NUMBER: 5624-161-999
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 869-9741
INFORMATION FOR SEQ ID NO: 6:
SEQUENCE CHARACTERISTICS:
                                                                                    COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH: 589 amino acids TYPE: AMINO ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TOPOLOGY: linear
MOLECULE TYPE: protein
US-07-668-648-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM:
                                             COMPUTER READABLE FORM:
                                                                                                                                                                                              FILING DATE: 19
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNTRY: US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -08-429-998-6
    COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
```

```
RESULT 6
US-08-429-998-2
US-08-429-998-2
; Sequence 2, Application US/08429998
; Patent No. 5885961
; GENERAL INFORMATION:
; APPLICANT: Shoyab, Mohammed
; APPLICANT: Plowman, Gregory D.
; TITLE OF INVENTION: EPITHELINS: NOVEL CYSTEINE-RICH GROWTH

"TOTAL OF INVENTION: MODULATING PROTEINS
                                                                                                                                         NOVEL CYSTEINE-RICH GROWTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 589;
                                                                                                                                                                                                                                                                                                                                                                                                                     SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/07/668,648 FILING DATE: 19910819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Patentin Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                     Sequence 2, Application US/07668648
Patent No. 5416192
GENERAL INFORMATION:
APPLICANT: Shoyab, Mohammed
APPLICANT: Plowman, Gregory D.
TITLE OF INVENTION: BPITHELINS: NOVEL CY
TITLE OF INVENTION: MODULATING PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 62;
Pred. No. 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE: Pennie & Edmonds
STREET: 1155 Avenue of the Americas
CIIY: New York
                                                                                                                                                                                                                        ADDRESSEE: Pennie & Edmonds
STREET: 1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   344 KKVTASLSLPDPQILKND 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 KKVIAPRRLPDPQILKSD 18
                                                                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM:
MEDIUM TYPE:
COMPUTER: THEM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  18,872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE/DOCKET NUMBER: 5
TELECOMMUNICATION INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           64.6%;
illarity 72.2%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME: Misrock, S. Leslie
REGISTRATION NUMBER: 18,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (212)790-9090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEFAX: (212) 869-9741
INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LENGTH: 589 amino acids TYPE: AMINO ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CORRESPONDENCE ADDRESS:
ADDRESSEE: Pennie &
                                                                                                                                                                                NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
ADDRESSEE: Pennie &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
Matches 13; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New York
                                                                                                                                                                                                                                                                                    New York
: USA
                                                                                                                                                                                                                                                               New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10036
                                                                                                                                                                                                                                                                                                                           ZIP: 10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COUNTRY:
                                                                                                                                                                                                                                                                                                         COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-07-668-648-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STATE:
                                                                                                                                                                                                                                                                                    STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
APPLICANT: SETECO, dinette
TILE BE DE INVENTION: 88 AD TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE BE PERENCE: 29996.488/P001-A
CURRENT APPLICATION NUMBER: US/08/991,862
CURRENT FILING DATE: 1998-08-17
EARLIER APPLICATION NUMBER: 08/863,862
EARLIER FILING DATE: 1997-05-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
Gregory D. EPITHELINS: NOVEL CYSTEINE-RICH GROWTH MODULATING PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                   OUTTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US91/02321
FILING DATE: 19910403
CLASSIFICATION: 514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6.3e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 89; DB 4;
Pred. No. 9e-07;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0; Mismatches
                                                          NUMBER OF SEQUENCES: 12
CORRESPONDENCE ADDRESS:
STREET: 3005 First Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 96;
Pred. No. (
                                                                                                                                                                                                                                                                                                                                                                                 CLASSIFICATION: 514
ATTORNET/AGENT INFORMATION:
NAME: POOT, BILAN WESTSTATION NUMBER: 32,928
REFERENCE/DOCKET NUMBER: 0N0071A-PC
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIOM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; ORGANISM: Mouse epithelin/granulin US-08-991-862-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             344 KKVIAPRRLPDPQILKSDT 362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 2, Application US/08991862
Patent No. 6309826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   344 KKVIAPLRLPDPQILKSDT 362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 KKVIAPRRLPDPQILKSDT 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 KKVIAPRRLPDPQILKSDT 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity 100.0%;
Matches 19; Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 92.7%;
Best Local Similarity 94.7%;
Matches 18; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELERAX: (206)448-4775
INFORMATION FOR SEQ ID NO: (SEQUENCE CHARACTERISTICS:
LENGTH: 589 amino acids
TYPE: AMINO ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQ ID NOS: 17
SOFTWARE: Patentin Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MOLECULE TYPE: protein
PCT-US91-02321-6
                                                                                                                                         CITY: Seattle
STATE: Washington
APPLICANT: Plowman FITLE OF INVENTION: FITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                linear
                                                                                                                                                                                COUNTRY: USA
ZIP: 98121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQ ID NO 2
LENGTH: 589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: PRT
```

ð 셤 å g

Gaps

```
APPLICANT: Serrero, Ginette
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE REFERENCE: 19996.488/P001-A
CURRENT APPLICATION NUMBER: US/08/991,862
CURRENT FILING DATE: 1998-08-17
                                                                                                                                                                                                                                                                                   APPLICANT: Shoyab, Mohammed
TITLE OF INVENTION: EPITHELINS: NOVEL CYSTEINE-RICH GROWTH
TITLE OF INVENTION: MODULATING PROTEINS
                Length 589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: Patentin Release #1.0, Version #1.25
CUBRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US91/02321
FILING DATE: 19910403
                       Score 62; DB 2;
Pred. No. 0.025;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 62; DB 5;
Pred. No. 0.025;
                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE: Bristol-Myers Squibb Company
STREET: 3005 First Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EARLIER APPLICATION NUMBER: 08/863,862
                                                                                                                                                                                                                                       Sequence 2, Application PC/TUS9102321 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-08-991-862-6
: Sequence 6, Application US/08991862
: Patent No. 6309826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                344 KKVTASLSLPDPQILKND 361
                                                                                                                                       344 KKVTASLSLPDPQILKND 361
                                                                                                   1 KKVIAPRRLPDPQILKSD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      E: Floppy disk
IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATTORNEY AGENT INFORMATION:
NAME: POOL, BYIAN W.
REGISTRATION NUMBER: 32,928
REFERENCE/DOCKET NUMBER: ON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EARLIER FILING DATE: 1997-05-23
NUMBER OF SEQ ID NOS: 17
SOFTWARE: Patentin Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   relecommunication information Telephone: (206)728-4800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              64.68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 KKVIAPRRLPDPQILKSD
                     64.6%;
ilarity 72.2%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 64.6
Best Local Similarity 72.2
Matches 13; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; MOLECULE TYPE: protein
PCT-US91-02321-2
                                                                                                                                                                                                                                                                                                                                                                    NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CLASSIFICATION: 514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER: IBM PC
OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Washington
                       Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AMINO ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                    CITY: Seattle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               USA
                                                               13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COUNTRY:
                                            Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Shoyab, Mohammed
APPLICANT: Plowman, Gregory D.
APTLLE OF INVENTION: EPITHELINS: NOVEL CYSTEINE-RICH GROWTH
TITLE OF INVENTION: MODULATING PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 62; DB 2; Length 589;
Pred. No. 0.025;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         E: Pennie & Edmonds
1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/668,648
FILING DATE: 13-MAR-1991
ATTORNEY/AGENT INFORMATION:
JABER: US/08/429,998
27-APR-1995
                                                           PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/668,648
FILING DATE: 13-MAR-1991
ATTORNET/AGENT INFORMATION:
NAME: MISTOCA, S. Leslie
REGISTRATION NUMBER: 18,872.
REFERENCE/DOCKET NUMBER: 5624-161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: US/08/431,333
FILING DATE: 27-APR-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME: Misrock, S. Leslie
REGISTRATION NUMBER: 18,872
REFERENCE/DOCKET NUMBER: 5624
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 2, Application US/08431333
Patent No. 5965723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         344 KKVTASLSLPDPQILKND 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 KKVIAPRRLPDPQILKSD 18
                                                                                                                                                                                                     PELECOMMUNICATION INFORMATION
                                                                                                                                                                                                                                                                    TYPE: amino acids
TOPOLOGY: 14-
                                                                                                                                                                                                                        TELEPHONE: (212)790-9090
TELEFRAX: (212)786-90741
INFORMATION FOR SEQ. ID NO: 2.
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 64.6
Best Local Similarity 72.2
Matches 13; Conservative
                                                                                                                                                                                                                                                                                                                                                               ; MOLECULE TYPE: protein US-08-429-998-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; TOPOLOGY: linear; MOLECULE TYPE: protein US-08-431-333-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
    APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CITY: New York
STATE: New York
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CLASSIFICATION:
                     FILING DATE: 27 CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-08-431-333-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
```

Matches

ð

RESULT 12

```
Gregory D. EPITHELINS: NOVEL CYSTEINE-RICH GROWTH
                                                                              NOVEL CYSTEINE-RICH GROWTH
                                                                                                                                                                                                                                                                                                                                        SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: 05/08/429,998
FILING DATE: 27-APR-1995
CLASSIFICATION: \ 514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 44; DB 2;
Pred. No. 23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MODULATING PROTEINS
                                                            Gregory D.
EPITHELINS: NOVEL C'
MODULATING PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADDRESSEE: Pennie & Edmonds
STREET: 1155 Avenue of the Americas
                                                                                                                                                                           1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/668,648
FILING DATE: 13-MAR-1991
ATTORNET/AGENT INFORMATION:
                                                                                                                                                                                                                                                            ZIP: 100,00
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
AnsonTING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 4, Application US/08431333
Patent No. 5965723
GENERL INFORMATION
APPLICANT: Shoyab, Mohammed
APPLICANT: Plowman, Gregory D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         346 EKAPAHLSLPDPQALKRD 363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 KKVIAPRRLPDPQILKSD 18
                                                                                                                                                           Pennie & Edmonds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    18,872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FELECOMMUNICATION INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          55.68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEPHONE: (212)790-9090
TELEFAX: (212) 869-9741
INFORMATION FOR SEQ ID NO: 4:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME: Misrock, S. Leslie
REGISTRATION NUMBER: 18,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         : 593 amino acids
amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Plowman, Greg
TITLE OF INVENTION: EPIT
TITLE OF INVENTION: MODU
NUMBER OF SEQUENCES: 12
CORRESSONDEMCE ADDRESS:
ADDRESSEE: Pennie & Ed
Patent No. 5885961
GENERAL INFORMATION:
APPLICANT: Shoyab, Mohan
APPLICANT: Plowman, Gree
TITLE OF INVENTION: RPIT
TITLE OF INVENTION: MODU
TITLE OF INVENTION: MODU
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-429-998-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
Matches 10; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          New York
                                                                                                                                                                                                                                        USA
                                                                                                                                                                                                                                      COUNTRY: US
ZIP: 10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10036
                                                                                                                                                         ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STATE: Ne COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-08-431-333-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH:
                                                                                                                                                                                 STREET:
                                                                                                                                                                                                                     STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                              NAME/KEY: PEPTIDE

COLATION: (1)..(19)

COTHER INFORMATION: Internal peptide of human GP88 used to develop

COTHER INFORMATION: neutralizing anti-human GP88 monoclonal antibody

US-08-991-862-6
                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 4, Application US/07668648
Patent No. 5416192
GENERAL INFORMATION:
APPLICANT: Shoyab, Mohammed
APPLICANT: Plowah, McGregory D.
TITLE OF INVENTION: EPITHELINS: NOVEL CYSTEINE-RICH GROWTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 593;
                                                                                                                                                                                                                 45.8%; Score 44; DB 4; Length 19; 55.6%; Pred. No. 0.45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                          7; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                          1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MODULATING PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 44;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADDRESSEE: Pennie & Edmonds
STREET: 1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/668,648
FILING DATE: 19910819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 4, Application US/08429998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 EKAPAHLSLPDPQALKRD 18
                                                                                                                                                                                                                                                                                            1 KKVIAPRRLPDPQILKSD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME: Misrock, S. Leslie
RECISTRATION NUMBER: 18,897
REFERENCE/DOCKET NUMBER: 56
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 KKVIAPRRLPDPQILKSD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ch 45.8%;
1 Similarity 55.6%;
10; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CLASSIFICATION: 514
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEFAX: (212) 869-9741
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   : 593 amino acids
AMINO ACID
                                                                                                                                                                                                                                                        10; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TOPOLOGY: linear
MOLECULE TYPE: protein
                                          TYPE: PRT
ORGANISM: Human granulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE OF INVENTION: EP
TITLE OF INVENTION: MOI
NUMBER OF SEQUENCES: 1:
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local Similarity
Matches 10; Conserva
                                                                                                                                                                                                                                      Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 New York
New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COUNTRY: U
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-07-668-648-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 13
US-08-429-998-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CITY: N
STATE:
  SEQ ID NO 6
LENGTH: 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                   Query Match
```

ŏ a

ô

Length 593;

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Serrero.

APPLICANT: Serrero.

TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE REFRENCE: 29996.488/P001.A

CURRENT APPLICATION NUMBER: US/08/991,862

CURRENT FILING DATE: 1998-08-17

EARLIER APPLICATION NUMBER: 08/863,862

EARLIER FILING DATE: 1997-05-23

NUMBER OF SEQ ID NOS: 17

SEQ ID NO 17

LENGTH: 593

TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                            45.8%; Score 44; DB 2; Length 593;
55.6%; Pred. No. 23;
tive 1; Mismatches 7; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 4; Length 593;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 44; DB; Pred. No. 23; 1; Mismatches
APPLICATION NUMBER: US/08/431,333
FILING DATE: 27-APR-1995
CLASSIFICATION: 536
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/668,648
FILING DATE: 13-MR-1991
ATTORNEY/AGENT INFORMATION:
NAME: Misrock, S. Leslie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 17, Application US/08991862
Patent No. 6309826
GENERAL INFORMATION:
                                                                                                                                        NAME: MISTOCK, S. Leslie
REGISTRATION NUMBER: 18,872
REFERENCE/DOCKET NUMBER: 5624
TELEPHONE: (212)790-9090
TELEPHONE: (212)790-9090
TELEPAS: (212) 869-9741
INFORMATION FOR SEQ ID NO: 4: SEQUENCE CHARACTERISTICS:
LENGTH: 593 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-431-333-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   346 EKAPAHLSLPDPQALKRD 363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 KKVIAPRRLPDPQILKSD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 KKVIAPRRLPDPQILKSD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ouery Match
Best Local Similarity 55.6%;
Matches 10; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity 55.6%
Matches 10; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; ORGANISM: Human GP88 cDNA
US-08-991-862-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 15
US-08-991-862-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ő
```

Search completed: July 8, 2003, 16:30:16 Job time: 13.6923 secs

- States

```
GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
```

 protein search, using sw model OM protein July 8, 2003, 16:24:26; Search time 18.5128 Seconds (without alignments) 119.483 Million cell updates/sec Run on:

US-09-824-647-3 96

1 KKVIAPRRLPDPQILKSDT 19 Title: Perfect score: Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

445758 seqs, 116419773 residues Searched:

Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Database :

/cgn2\_6/ptodata/2/pubpaa/US07\_NEW\_PUB.pep /ptodata/2/pubpaa/US06\_NEW\_PUB Published\_Applications\_AA:

/ptodata/2/pubpaa/US10\_NEW\_PUB pep: /ptodata/2/pubpaa/US10\_PUBCOMB pep: /ptodata/2/pubpaa/US60\_NEW\_PUB.pep: \_6/ptodata/2/pubpaa/US08\_NEW\_PUB.pep:\* \_6/ptodata/2/pubpaa/US08\_PUBCOMB.pep:\* \_6/ptodata/2/pubpaa/US09\_NEW\_PUB.pep:\* \_2\_6/ptodata/2/pubpaa/US09\_PUBCOMB.pep: ptodata/2/pubpaa/PCTUS\_PUBCOMB.pep /cgn2\_6/ptodata/2/pubpaa/US07\_PUBCOMB.pep /pubpaa/PCT\_NEW\_PUB.pep

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

/cgn2\_6/ptodata/2/pubpaa/US60\_PUBCOMB.pep:

## SUMMARIES

	٠	æ					
Result No.	Score	Query Match	Query Match Length DB	DB	ΩI	Description	
-	96	100.0	19	6	US-09-824-647-3	Sequence 3,	Appli
7	96	100:0	19	6	US-10-218-509-3	Sequence 3	
٣	96	100.0	19	6	US-10-281-160-3	Sequence 3	Appli
4	96	100.0	19	10	US-09-813-156-3	Sequence	m
S	96	100.0	19	10	US-09-824-807-3	Sequence	3
9	89	92.7	589	σ	US-09-824-647-2	Sequence 2	4
7	88	92.7	589	6	US-10-218-509-2	Sequence 2	
8	89	92.7	589	6	US-10-281-160-2	Sequence 2	Appli
σ	. 89	92.7	589	10	US-09-813-156-2	Sequence	. ~
10	88	92.7	589	9	US-09-824-807-2	Sequence	2, Appli
11	47	49.0	92	.10	US-09-800-971-11	Sequence	11,
12	46	47.9	824	0	US-10-226-844-1	Sequence 1	Ā
13	44	45.8	19	6	US-09-824-647-6	Sequence 6	
14	44	45.8	19	σ	US-10-218-509-6	Sequence 6	Appli
15	44	45.8	19	6	US-10-281-160-6	Sequence 6	, Appli
16	44	45.8	19	10	US-09-813-156-6	Sequence	6, Appl1
17	44	45.8	19	10	US-09-824-807-6	Sequence 6,	
18	44	45.8	319	σ	US-10-156-761-11112	Sequence 11112,	1112, A
19	44	45.8	593	6	US-09-824-647-17	Sequence 17	7, Appl

ö

Sequence 3, Application US/10218509 Publication No. US20030092661A1 GENERAL INFORMATION:

US-10-218-509-3

RESULT 2

20 44 45.8 593 9 US-10-218-509-17 21 44 45.8 593 10 US-0281-160-17 22 44 45.8 593 10 US-09-813-156-17 24 45.8 593 10 US-09-813-166-17 24 45.8 593 10 US-09-913-8 25 43 44.8 596 10 US-09-925-301-1416 27 41.5 43.2 450 10 US-09-925-301-1416 28 41 42.7 362 9 US-09-78-626-6120 31 41 42.7 7 798 9 US-09-78-626-5137 31 41 42.7 7 798 9 US-09-338-22 34 41 42.7 7 798 9 US-09-338-22 34 41 42.7 803 10 US-09-948-369-4 35 41 42.7 803 10 US-09-948-369-4 36 41 42.7 803 10 US-09-948-369-4 37 41 42.7 803 10 US-09-948-369-4 38 41 42.7 803 10 US-09-948-369-4 39 41 42.7 803 10 US-09-948-369-16 30 40.5 42.2 240 9 US-10-156-761-1275-4 40 41.7 335 10 US-09-883-161-64 44 40 41.7 335 10 US-09-883-161-64 45 40 41.7 335 10 US-09-883-161-64	Sequence 17, Appl Sequence 17, Appl Sequence 17, Appl Sequence 17, Appl Sequence 1146, Ap Sequence 13, Appl Sequence 13, Appl Sequence 120, Ap Sequence 46, Appl Sequence 46, Appl Sequence 2, Appl Sequence 178, Appl Sequence 178, Appl Sequence 1, Appl Sequence 1, Appl Sequence 1, Appl Sequence 2, Appl Sequence 1, Appl Sequence 1, Appl Sequence 1, Appl Sequence 2, Appl Sequence 2, Appl Sequence 2, Appl Sequence 2, Appl Sequence 2, Appl Sequence 1754, A Sequence 1, Appl Sequence 1, Appl	•
44 44 44 44 44 44 45.8 41.7 40.5 40.5 40.5 40.5 40.5 40.5 40.5 40.5		
	44 44 44 44 44 44 44 45.8 41 41 41 41 42.7 42.7 42.7 42.7 42.7 42.7 42.7 42.7	

#### ALIGNMENTS

```
Sequence 3, Application US/09824647

Publication No. US20020183270A1

GENERAL INFORMATION:

APPLICANT: Serrero, Ginette

TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS

FILE REPERENCE: 29996.4886/P001-A

CURRENT APPLICATION NUMBER: US/09/824,647

CURRENT FILING DATE: 2001-04-04

PRIOR PAPLICATION NUMBER: EARLIER APPLICATION NUMBER: 08/991,862

PRIOR FILING DATE: EARLIER FILING DATE: 1998-08-17

PRIOR PLING DATE: EARLIER FILING DATE: 1998-08-17

SOFTWARE: PALEORITO NOS: 17

SOFTWARE: PALEORITO NOS: 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCATION: (1)..(19)
OTHER INFORMATION: Internal peptide of mouse GP88 used to raise the OTHER INFORMATION: antisera against the GP88 used in the OTHER INFORMATION: immunoaffinity step.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 100.0%; Score 96; DB 9; Length 19; Best Local Similarity 100.0%; Pred. No. 8.9e-09; Matches 19; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 KKVIAPREPDPQILKSDT 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 KKVIAPRRLPDPQILKSDT 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM: mouse granulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURE:
NAME/KEY: PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-824-647-3
                                                                                                                                                                                                                                                                                                                                                                                                       SEQ ID NO 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     q
```

```
Sequence 3, Application US/09824807

Patent No. US20020094966A1

GENERAL INFORMATION:

APPLICANT: Serrero, Ginette

TITLE OF INVENTION:

FILE REFERENCE: 2996.44807

CURRENT APPLICATION NUMBER: 108/09/824,807

CURRENT APPLICATION NUMBER: 08/991,862

PRIOR PELING DATE: 1997-12-16

PRIOR FILING DATE: 1997-05-23

NUMBER OF SEQ ID NOS: 17

SOFTWARE: Patentin Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURE:
NAME/KEY: PEPTIDE
LOCATION: (1)..(19)
OTHER INFORMATION: Internal peptide of mouse GP88 used to raise the
OTHER INFORMATION: antisera against the GP88 used in the
OTHER INFORMATION: immunoaffinity step.
                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCATION: (1)..(19)
OTHER INFORMATION: Internal peptide of mouse GP88 used to raise the OTHER INFORMATION: antisera against the GP88 used in the OTHER INFORMATION: immunoaffinity step.
                                                        TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100.0%; Score 96; DB 10;
dlarity 100.0%; Pred. No. 8.9e-09;
Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100.0%; Score 96; DB 10; 100.0%; Pred. No. 8.9e-09;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                         FILE REFERENCE: 2996.488/P001.A
CURRENT APPLICATION NUMBER: US/09/813,156
CURRENT FILING DATE: 2001-03-21
PRIOR APPLICATION NUMBER: 08/991,862
PRIOR FILING DATE: 1997-12-16
PRIOR FILING DATE: 1997-05-23
NUMBER OF SEQ ID NOS: 17
SOFTWARE: PATENT NOY. 2.0
SOFTWARE: PATENT NOY. 2.0
SOFTWARE: 1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-824-647-2
; Sequence 2, Application US/09824647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 KKVIAPRRLPDPQILKSDT 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 KKVIAPRRLPDPQILKSDT 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 KKVIAPRRLPDPQILKSDT 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             100.08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 100.0
Best Local Similarity 100.0
Matches 19; Conservative
                                                                                                                                                                                                                                                                                                                                                                 ORGANISM: mouse granulin FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM: mouse granulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
Matches 19; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                               NAME/KEY: PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-813-156-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-824-807-3
                                                                                                                                                                                                                                                                                                                                                PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         쉽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0; Gaps
APPLICANT: Serrero, Ginette
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE REPERENCE: 2996.488/P001-A
CURRENT APPLICATION NUMBER: US/10/218,509
CURRENT FILING DATE: 2002-08-15
PRIOR PILLIG DATE: 1998-08-17
PRIOR FILING DATE: 1998-08-17
PRIOR PILLIG DATE: 1997-05-23
NUMBER OF SEQ ID NOS: 17
SOFTWARE: PATENTIN VET: 2.0
SEQ ID NO 3
LENGTH: 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 3, Application US/10281160
Publication No. US20030108950A1
GENERAL INFORMATION

GENERAL INFORMATION:
GENERAL INFORMATION:
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE REPERENCE: 29996.488/P001-A
CURRENT FILING DATE: 2002-10-28
PRIOR APPLICATION NUMBER: US/08/991,862
PRIOR FILING DATE: 1999-08-17
PRIOR FILING DATE: 1999-08-17
PRIOR FILING DATE: 1999-08-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KET: PEPTIDE
LOCATION: (1)..(19)
OTHER INFORMATION: Internal peptide of mouse GP88 used to raise the
OTHER INFORMATION: antisera against the GP88 used in the
OTHER INFORMATION: immunoaffinity step.
                                                                                                                                                                                                                                                                                                                                                                                                             LOCATION: (1)..(19)
OTHER INFORMATION: Internal peptide of mouse GP88 used to raise the OTHER INFORMATION: antisera against the GP88 used in the OTHER INFORMATION: immunoaffinity step.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 100.0%; Score 96; DB 9; Length 19; Best Local Similarity 100.0%; Pred. No. 8.9e-09; Matches 19; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100.0%; Score 96; DB 9;
100.0%; Pred. No. 8.9e-09;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; Sequence 3, Application US/09813156
; Patent No. US20020061859A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 KKVIAPRRLPDPQILKSDT 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 KKVIAPRRLPDPQILKSDT.19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 KKVIAPRRLPDPQILKSDT 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQ ID NOS: 17
SOFTWARE: Patentin Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity 100.
Matches 19; Conservative
                                                                                                                                                                                                                                                                                                                                         ORGANISM: mouse granulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM: mouse granulin
                                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY: PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 4
US-09-813-156-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-10-281-160-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-10-218-509-3
                                                                                                                                                                                                                                                                                                                     TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQ ID NO 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
```

ö

Length 19;

ö

Gaps

ö

Length 19; Indels

```
NUMBER OF SEQ ID NOS: 17
                       SOFTWARE: Patentin Ver.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-813-156-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -09-824-807-2
                                                                                                                                                                                                                                                                                                                                                                                                           US-09-813-156-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: PRT
                                               SEQ ID NO 2
                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 2, Application US/10218509
Eublication No. US20030092661A1
GENERAL INFORMATION:
APPLICANT: Serrero, Ginette
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE REPERENCE: 29996.488/F001.A
CURRENT APPLICATION NUMBER: US/10/218,509
CURRENT FILING DATE: 2002-08-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 2, Application US/10281160
Eublication No. US20030108950A1
GENERAL INFORMATION:
APPLICANT: Serrero, Ginette
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE REPERENCE: 2996.488/P001.A
CURRENT APPLICATION NUMBER: US/10/281,160
CURRENT FILING DATE: 2002-10-28
                                        APPLICANT: Serrero, Ginette
TITLE OF INVENTION: 88 RDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE REFERENCE: 29966.488/P001-A
CURRENT APPLICATION NUMBER: US/09/824,647
CURRENT FILING DATE: 2001-04-04
PRIOR APPLICATION NUMBER: ERRLIER APPLICATION NUMBER: 08/991,862
PRIOR PILIOR DATE: EARLIER FILING DATE: 1998-08-17
PRIOR PLICATION NUMBER: EARLIER APPLICATION NUMBER: 08/863,862
PRIOR FILING DATE: EARLIER FILING DATE: 1997-05-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 589;
                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                        6.1e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 89; DB 9;
Pred. No. 6.1e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 89;
Pred. No. 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION NUMBER: US/08/991,862
PRIOR FILING DATE: 1998-08-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION NUMBER: 08/991,862
PRIOR FILING DATE: 1998-08-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION NUMBER: 08/863,862
PRIOR FILING DATE: 1997-05-23
NUMBER OF SEQ ID NOS: 17
SOFTWARE: Patentin Ver: 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM: Mouse epithelin/granulin
                                                                                                                                                                                                                                                                                                                                                              ; ORGANISM: Mouse epithelin/granulin US-09-824-647-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    344 KKVIAPLRLPDPQILKSDT 362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 KKVIAPRRLPDPQILKSDT 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 KKVIAPRRLPDPQILKSDT 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 92.7%;
Best Local Similarity 94.7%;
Matches 18; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                   92.7%;
US20020183270A1
                                                                                                                                                                                                                                               NUMBER OF SEQ ID NOS: 17
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 2
LENGTH: 589
                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity 94.77
Matches 18; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQ ID NO 2
LENGTH: 589
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-10-218-509-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                õ
```

```
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INCORDATION:

APPLICANT: Serrero, Ginette
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
TITLE REFERENCE: 29996;488/P001-A
CURRENT APPLICATION NUMBER: US/09/813,156
CURRENT FILING DATE: 2001-03-21
PRIOR FILING DATE: 1997-12-16
PRIOR FILING DATE: 1997-12-16
PRIOR PLICATION NUMBER: 08/991,862
PRIOR PLICATION NUMBER: 08/863,862
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: SETTETO, GINETTE
TITLE ON TUNENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE REFERENCE: 29996.488/P001-A
CURRENT APPLICATION NUMBER: US/09/824,807
CURRENT FILING DATE: 2001-04-04
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 589;
                                                                                                        Length 589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 89; DB 10;
Pred. No. 6.1e-06;
0; Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 89; DB 10;
Pred. No. 6.1e-06;
0; Mismatches 1;
                                                                                                        Query Match 92.7%; Score 89; DB 9; Best Local Similarity 94.7%; Pred. No. 6.1e-06; Matches 18; Conservative 0; Mismatches 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION NUMBER: 08/991,862
PRIOR PILING DATE: 1997-12-16
PRIOR APPLICATION NUMBER: 08/863,862
PRIOR FILING DATE: 1997-05-23
; TYPE: PRT ; ORGANISM: Mouse epithelin/granulin US-10-281-160-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM: Mouse epithelin/granulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; ORGANISM: Mouse epithelin/granulin US-09-824-807-2
                                                                                                                                                                                                                                                                                                                                                             Sequence 2, Application US/09813156
Patent No. US20020061859A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 2, Application US/09824807
Patent No. US20020094966A1
                                                                                                                                                                                                                           1 KKVIAPRRLPDPQILKSDT 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 KKVIAPRRLPDPQILKSDT 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 92.7%;
Best Local Similarity 94.7%;
Matches 18; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 92.7%;
Best Local Similarity 94.7%;
Matches 18; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRIOR FILING DATE: 1997-05-23
NUMBER OF SEQ ID NOS: 17
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQ ID NOS: 17
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
```

us-09-824-647-3.rapb

ď 셤

```
Sequence 6, Application US/10218509

Publication No. US2003002661A1

GENERAL INFORMATION:

APPLICANT SETTERCY, GINETE

TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS

FILE REFERENCE: 29996.488/P001-A

CURRENT APPLICATION NUMBER: US/10/218,509

CURRENT FILING DATE: 1998-08-15

PRIOR PLICATION NUMBER: 08/991,862

PRIOR FILING DATE: 1998-08-17

PRIOR FILING DATE: 1998-08-17

PRIOR FILING DATE: 1998-08-17

NUMBER OF SEQ ID NOS: 17

SOFTWARE: PARCHIN VET. 2.0

SSETURARE: PARCHIN VET. 2.0
                                                                       APPLICAMT: Serrero. Ginette
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILLE REPERENCE: 29996.488/P001-A
CURRENT APPLICATION NUMBER: US/09/824,647
CURRENT FILING DATE: 2001-04-04
PRIOR APPLICATION NUMBER: EARLIER FILING DATE: 1998-08-17
PRIOR FILING DATE: EARLIER FILING DATE: 1998-08-17
PRIOR FILING DATE: EARLIER FILING DATE: 1997-05-23
NUMBER OF SEGILD NOS: 17
SOFTWARE: PATÉMICH OF SEGILD NOS: 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME/KET: PEPTIDE
LOCATION: (1). (12)
COTHER INFORMATION: Internal peptide of human GP88 used to develop
OTHER INFORMATION: neutralizing anti-human GP88 monoclonal antibody.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CATION: (1)..(19)

OTHER INFORMATION: Internal peptide of human GP88 used to develop

OTHER INFORMATION: neutralizing anti-human GP88 monoclonal antibody
US-10-218-509-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 44; DB 9;
Pred. No. 1.4;
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 44; DB 9;
Pred. No. 1.4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
Sequence 6, Application US/09824647 Publication No. US20020183270A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-10-281-160-6; Sequence 6, Application US/10281160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 KKVIAPRRLPDPQILKSD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             45.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity 55.6%;
Matches 10; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 45.8%
Best Local Similarity 55.6%
Matches 10; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: PRT
ORGANISM: Human granulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM: Human granulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY: PEPTIDE
                                                                                                                                                                                                                                                                                                                                                      SEC ID NO 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 1, Application US/10226844

Publication No. US20030113764A1

GENERAL INFORMATION:

APPLICANT: Bodary, Sarah C.

APPLICANT: Bodary, Sarah C.

TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR THE TREATMENT OF TUMORS
FILE REFERENCE: P1773R1

CURRENT APPLICATION NUMBER: US/10/226,844

CURRENT APPLICATION NUMBER: US/09/627,202

PRIOR APPLICATION NUMBER: US/09/627,202

PRIOR APPLICATION NUMBER: US 60/146,217

PRIOR FILING DATE: 1999-07-28

NUMBER: OF SEQ ID NOS: 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                   APPLICATION MAYERS
TITLE OF INVENTION: 16835, A NOVEL HUMAN PHOSPHOLIPASE C
TITLE OF INVENTION: 16835, A NOVEL HUMAN PHOSPHOLIPASE C
TITLE OF INVENTION: 16835, A NOVEL HUMAN PHOSPHOLIPASE C
TITLE OF INVENTION: 10448-023001
CURRENT FILING DATE: 2001-03-06
CURRENT FILING DATE: 2001-03-06
PRIOR PPLICATION NUMBER: 60/187,453
PRIOR PPLICATION NUMBER: 60/189,032
PRIOR FILING DATE: 2000-03-09
NUMBER OF SEQ ID NOS: 11
SOFTWARE: FASTSEQ for Windows Version 4.0
SEQ ID NO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 46; DB 9; Length 824;
Pred. No. 55;
5; Mismatches 3; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 47; DB 10;
Pred. No. 3;
3; Mismatches 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
47.9%; Score 46;
Best Local Similarity 43.8%; Pred. No. 3
Matches 7; Conservative 6; Mismatcl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OTHER INFORMATION: consensus sequence US-09-800-971-11
                                                                                                                                                                                                   Sequence 11, Application US/09800971 Patent No. US20020098577A1 GENERAL INFORMATION:
                           2 KVIAPRRLPDPQILKSDT 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5 KIISARNLPDPYVKVSKT 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                :|: ||||| |:: ::
30 EVVLPRRLPGPRVRRA 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2 KVIAPRRLPDPQILKS 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity 50.0%;
Matches 9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: PRT
ORGANISM: Homo sapien
                                                                                                                                                                          US-09-800-971-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 13
US-09-824-647-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-10-226-844-1
```

ò g ö

Gaps

SEQ ID NO 1

a

难.

```
GENERAL INFORMATION:
GENERAL INFORMATION:
GENERAL INFORMATION:
TITLE OF INVENTION:
FILE REFRENCE: 2.996, 488, P001-A
CURRENT FILING DATE: 2.996, 488, P001-A
CURRENT FILING DATE: 2.996, 481, 160
CURRENT FILING DATE: 1097-028
PRIOR PRILING DATE: 1997-08-10-28
PRIOR APPLICATION NUMBER: 08/863,862
PRIOR FILING DATE: 1997-05-23
NUMBER OF SEQ ID NOS: 17
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 6
LENOTH: 19
TYPE: PRT
ORGANISM: Human granulin
FRATURE: PRT
ORGANISM: Human granulin
FRATURE: PRT
ORGANISM: INCORMATION: Internal peptide of human GP88 used to develop
GTHER INFORMATION: neutralizing anti-human GP88 monoclonal antibody.
US-10-281-160-6
```

ö

0; Gaps

Score 44; DB 9; Length 19; Pred. No. 1.4; 1; Mismatches 7; Indels

Query Match
Best Local Similarity 55.6%;
Matches 10; Conservative

Search completed: July 8, 2003, 16:31:39 Job time : 19.5128 secs

QQ Dp

# GenCore version 5.1.6 Copyright (c) 1993 - 2003 Compugen Ltd.

OM protein - protein search, using sw model

8, 2003, 16:19:45; Search time 19.2436 Seconds (without alignments) 94.918 Million cell updates/sec July Run on:

US-09-824-647-3 96 1 KKVIAPRRLPDPQILKSDT 19 Perfect score: Sequence: Title:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

283224 seqs, 96134422 residues Searched:

283224 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database :

PIR\_73:\* 1: pirl:\* 2: pir2:\* 3: pir3:\* 4: pir4:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

#### SUMMARIES

		Description	epithelin/granulin	epithelin/granulin	UDPglucose 4-epime	beta-ketoacyl redu	granulin precursor	late embryogenesis	hypothetical prote	hypothetical prote	-	hypothetical prote		$\rightarrow$	alpha-amylase (EC		thra bifunctional	aspartokinase I-ho	aspartokinase I, h	aspartokinase I/ho	probable dnaB prot	hypothetical prote	conserved hypothet	apical membrane an	apical membrane an	apical membrane an	UDP-N-acetylpyruvo	hypothetical prote	alcohol dehydrogen	probable exported	glutamate-tRNA lig
																					-										
		1																													
		1																				•									
		1																				•								٠	
			8	80	7	-		σ	0	0	7	6	7	7	7	6		6	0	7	4	_	m	9	9	6	7	0	e	m	٠
		<u>e</u>	38128	B38128	F81317	F83221	GYHU	r07099	r00150	H87710	<b>S</b> 56142	T01619	S74911	070987	JC5132	07070	DEECK	890629	B85480	AC0502	B70914	S28721	E82973	044986	B44986	A32499	G82541	r51200	069583	AH1053	27014
			ς,	8 Z	2 F	~ E	5	~	T ~	H 7	S	E ~	S	2	<u>د</u>	2	0	m ~	E	Ä.	B	S	E	~	2	8 8	<u>ი</u>	-	Ω	٧ 2	2
		ă i	.,	· ·	· ·	10			· ·	-		· '		.,		10	_	·'				·'	· ·	~	~	~		· ·	m	~	
		Match Length DB	586	589	328	256	29.	177	223	34,	26(	75.	24	28(	556	999	820	820	820	82(	87	1650	45	622	622	622	35.	368	378	462	490
	ery.	ch:	100.0	64.6	0.0	5.4	8.	8.	8.	8.	8.	8:	8.8	8.	æ.	æ.	æ.	8.	8.8	8.	8.	8.	3.2	3.2	.2	3.2	2.7	2.7	2.7	2.7	2.7
ф	Query	Mat	100	3	š	4	4	4	4	4	4	*	4	4	4	4	4	4	4	4	4	7	7	4	4	4	4	4	₹	4	4
		Score	96	62	48	44.5	44	43	43	43	43	43	. 42	42	42	42	42	42	42	42	. 42	42	41.5	41.5	41.5	41.5	41	41	41	41	41
	Result	No.	н	7	m	4	Ŋ	•	7	<b>60</b>	σ	10	11	12	. 13	14	15	16	17	18	19	20	. 12	22	23	24	52	56	27	28	53
	ĸ																	٠									•				

D-xylose transport hypothetical prote probable bZIP prot cell division prot cell division prot probable membrane hypothetical prote replication associ protein FINI9.5 [i outer membrane pro probable hydrolase	cyclin D3 - rat
887 987 987 987 988 988 988 988 988	12
AG3527 T04980 D96563 A81741 S50293 A710115 T10115 T46530 T46530 T62391 I62389 I62389 I62389 I62389 I62389 I62389 I62389	JC4012
00000000000000000	7
512 750 750 750 750 111 111 115 115 115 115 115 115 115 1	293
2222222111222222	•
200 200 200 200 200 200 200 200 200 200	
	41.7

## ALIGNMENTS

```
"N'Alternate names: acrogranis, Pr-cell-derived growth factor
C;Species: Mus musculus (house mouse)
C;Species: Musculus (149468; M46705
R;Plowman, G.D.; Green, J.M.; Neubauer, M.G.; Buckley, S.D.; McDonald, V.L.; Todž
J. Blol. Cham. 267, 13073-13078, 1992
A;Fitle: The epithelin precursor encodes two proteins with opposing activities or A;Reference number: A38128; MUID:92317004; PMID:1618805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gross-references: GB:X62321; NID:950851; PIDN:CAA44197.1; PID:950852
Baba, T.; Nemoto, H.; Watanabe, K.; Arai, Y.; Gerton, G.L.
Bab Lett. 322, 89-94, 1993
Filtle: Exon/Antron organization of the gene encoding the mouse epithelin/granu.
Reference number: S32503; MUID:93245991; PMID:8482392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Molecule type: DNA

Residues: 18-349, 'L',351-589 <BAB>

; Babb, T.; Hoff, H.B.

iol. Reprod. Dev. 34, 233-243, 1993

iol. Reprod. Dev. 34, 233-243, 1993

; Title: Arrogranin, an acrosomal cysteine-rich glycoprotein, is the precusor of

; Reference number: 148141; MUID:93228994; PMID:8471244
- mouse
epithelin/granulin precursor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Molecule type: mRNA
Residues: 1-589 <PLO>
                                                                                                                                                                                                                                                                                                                                                                                                                  Accession: C38128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Accession: S32503
```

Status: preliminary; translated from GB/EMBL/DDBJ Accession: 149468

Residues: 1-250,'L',252-253,'V',255-349,'L',351-401,'SA',404-589 <RES>;Cross references: GB:M06736; NID:9191766; PIDN:AAA37191.1; PID:9191767;Zhou, J.; Gao, G.; Crabb, J.W.; Serrero, G. Molecule type: mRNA

Title: Purification of an autocrine growth factor homologous with mouse epithe. Reference number: A46705; MOID:93266526; PMID:8496151 Biol. Chem. 268, 1086; Title: Purification of

preliminary A; Accession: A46705

A; Molecule type: protein A; Residues: 18-19, 'X', 21-25, 'X', 27-29, 'XX', 32; 'XXX', 119-127; 152-154, 'DXK', 158-16

C; Superfamily: granulin

Gaps ö Length 589; Query Match
100.0%; Score 96; DB 2;
Best Local Similarity, 100.0%; Pred. No. 1.2e-07;
Matches 19; Conservative 0; Mismatches 0;

ö

1 KKVIAPRRLPDPQILKSDT 19

344 KKVIAPRLPDPQILKSDT 362

q Q

RESULT B38128

Gaps

ö

Indels

9

```
C; Accession: F83221
R; Stover, C.K.; Fham, X.Q.; Erwin, A.L.; Mizoguchi, S.D.; Warrener, P.; Hickey, M.J
adman, S.; Yuan, Y.; Brody, L.L.; Coulter, S.N.; Folger, K.R.; Kas, A.; Larbig, K.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  N.Alternate names: epithelin
N.Contains: granulin A; granulin B; granulin C; granulin D; granulin E; granulin F;
C;Species: Homo saptens (man)
C;Date: 30-Sep-1992 & sequence_revision 03-May-1996 #text_change 08-Dec-2000
C;Accession: JC1284; A38128; A38118; A36698; B36698; C36698; D36698; A56873
R;Bhandari, V.; Bateman, A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Residues: 1-593 <BHA>
R; Plowman, G.D.; Green, J.M.; Neubauer, M.G.; Buckley, S.D.; McDonald, V.L.; Todarc J. Biol. Chem. 267, 13073-13078, 1992
J. Biol. Chem. 267, 13073-13078, 1992
A; Paritle: The epithelin precursor encodes two proteins with opposing activities on € A; Reference number: A38128; MUID:92317004; PMID:1618805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Cross references: GB:X62320; NID:g31192; PIDN:CAA44196.1; PID:g31193
Bhandari, V.; Palfree, R.G.E.; Bateman, A.
Cross Natl. Acad. Sci. 05.7. 89, 1715-1719, 1992
Title: Isolation and sequence of the granulin precursor cDNA from human bone marr
Reference number: A38118; MUID:92179253; PMID:1542665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Residues: 1-406,'R',408-433,'G',435-453,'G',455-459,'Q',461-546,'A',548-566,'R',5
Cross-references: GB:M75161; NID:9183612; PIDN:AAA58617.1; PID:9183613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A.Title: Complete genome sequence of Pseudomonas aeruginosa PA01, an opportunistic A.Reference number: A82950; MUID:20437337; PMID:10984043
A.Accession: F83221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Gene: rhlG; PA3387
C;Superfamily: ribitol dehydrogenase; short-chain alcohol dehydrogenase homology
                                                                                                                                                                                                                                                                                                                                                                              oeta-ketoacyl reductase PA3387 [imported] - Pseudomonas aeruginosa (strain PAO1)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Cross-references: GB:AE004760; GB:AE004091; NID:99949520; PIDN:AAG06775.1;
                                                                                                                                                                                                                                                                                                                                                                                                                         C;Species: Pseudomonas aeruginosa
C;Date: 15-Sep-2000 #sequence_revision 15-Sep-2000 #text_change 31-Dec-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 tochem. Biophys. Res. Commun. 188, 57-63, 1992
Title: Structure and chromosomal location of the human granulin gene. Reference number: JC1284; MUID:93038704; PMID:1417868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           E, D.; Bennett, H.; Lazure, C.; Solomon, Commun. 173, 1161-1168, 1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Note: this sequence has been revised in reference JC1284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 44.5; Di
Pred. No. 12;
3; Mismatches
        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    189 VIAPGREPSRMTRHIANDPQALEADS 214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -DPQILKSDT 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             granulin precursor [validated] - human
        ;
                                                                                                                                                                   280 KVELAPRRAGDPSVLISD 297
                                                                                 1 KKVIAPRRLPDPQILKSD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Experimental source: strain PAO1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     46.4%;
ilarity 42.3%;
Conservative
        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3 VIAPRRLP----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Y, S.; Olson, M.V.
406, 959-964, 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
Watches 11; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Status: preliminary
A;Molecule type: DNA:
A;Residues: 1-256 <STO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -593 <PLO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Molecule type: mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Molecule type: mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Accession: JC1284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Accession: A38128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Molecule type:
        10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  :Genetics:
        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Lory,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð
                                                                                                                                                                   셤
                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 3

PRESULT 3

UDPGlucose 4-epimerase (EC 5.1.3.2) Cjll31c [imported] - Campylobacter jejuni (strain NC c; Species: Campylobacter jejuni
C; Species: C; Date: 31-Mar-2000 #sequence_revision 31-Mar-2000 #text_change 03-Jun-2002
C; Accession: PR1317
N; Reterence number: B.W.; Mungall, K.; Ketley, J.M.; Churcher, C.; Basham, D.; Chillin
N; Ritle: The genome sequence of the food-borne pathogen Campylobacter jejuni reveals hyp
A; Reference number: A81250; MUID:20150912; PMID:10688204
A; Residues: Prellminary
A; Reterence number: A81317
A; Status: prellminary
A; Residues: 1-328 <-RRE
A; Cross-references: GB:AL139077; GB:AL111168; NID:g6968444; PIDN:CAB73386.1; PID:g696856
A; Experimental source: serotype 02, strain NCTC 11168
C; Genetics:
A; Genet
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Reference number: A36698; MUID:91097544; PMID:2268320
A; Accession: E3668
A; Accession: E3668
A; Molecule type: protein
A; Residues: 279-307, 'SB', 310-324, 'T', 326, 'X', 328, 'Q' < BAT>
B; Bhandari, V.; Glaid, A.; Bateman, A.
B; Reference number: 153272, MuID:94062640; PMID:8243292
A; Accession: 153272
A; Accession: 153272
A; Accession: 153272
A; Molecule type: mRNA
A; Residues: 1-200, 'S', 203-388, 'M', 390-589 < RES>
A; Cross references: GB: M97750; NID: 9204223; PIDN: AAA16903.1; PID:9204224
C; Superfamily: granulin
epithelin/granulin precursor - rat
C;Species: Rattus norregicus (Norway rat)
C;Date: 10-Jul-1992 #sequence_revision 10-Jul-1992 #text_change 20-Aug-1999
C;Accession: B38128; A36199; B36199; B36698; I55272
R;Plowman, G.D.; Green, J.M.; Neubauer, M.G.; Buckley, S.D.; McDonald, V.L.; Todaro, G.J
A; Biol. Chem. 267, 13073-13078, 1992
A;Title: The epithelin precursor encodes two proteins with opposing activities on epithe
A;Reference number: A38128; MUID:92317004; PMID:1618805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Title: Epithelins 1 and 2: isolation and characterization of two cysteine-rich growth-Reference number: A36199; MUID:91045907; PMID:2236009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                              A; Molecule type: mRNA
A; Residues: 1-589 <PLO>
A; Cross-references: GB: X62322; NID: 956108; PIDN: CAA44198.1; PID: 956109
A; Cross-references: GB: X62322; NID: 956108; C:; Todaro, G.J.; Plowman, G.D.
R; Shoyab, M.; McDonald, V.L.; Byles, C.; Todaro, G.J.; Plowman, G.D.
Proc. Natl. Acad. Sci. U.S.A. 87, 7912-7916, 1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     s.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 L, H.; Lazure, C.; Solomon, 1161-1168, 1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       tochem. Biophys. Res. Commun. 173, 1161-1168, 1990
fitle: Granulins, a novel class of peptide from leukocytes
Reference number: A36698; MUID:91097544; PMID:2268320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 62; DB 2;
Pred. No. 0.043;
l; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bateman, A.; Belcourt, D.; Bennett,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            344 KKVTASLSLPDPQILKND 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 KKVIAPRRLPDPQILKSD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 64.6%;
Best Local Similarity 72.2%;
Matches 13; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Molecule type: protein
Residues: 280-300 <SHO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Molecule type: protein
Residues: 205-226 <SH2>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Accession: A36199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Accession: B36199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a
```

Belcourt,

Bateman,

Length 328;

Score 48; DB 2; Pred. No. 4.2;

50.0%; 55.6%;

GSPDB

ij

Gaps

Length 256;

Gaps

ö

```
R; Kaneko, J; Kimura, Y;; Kawakami, Y.; Tomita, T.; Kamio, Y.
Biosci. Biotechnol. Biochem. 61, 1960-1962, 1997
A; Title: Panton-Valentine leukocidin genes in a phage-like particle isolated fro A; Reference number: 214119; MUID:98067870; PMID:9404084
A; Accession: T00150
A; Status: translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        C; Accession: H87710
R; Netram, W.C; Feldblyum, T.V.; Paulsen, I.T.; Nelson, K.E.; Eisen, J.; Heidel
R; Merman, W.C.; Feldblyum, T.V.; Paulsen, I.T.; Nelson, K.E.; Eisen, J.; Haft, D.B
B; Laub, M.T.; DeBoy, R.T.; Dodson, R.J.; Durkin, A.S.; Gwinn, M.L.; Haft, D.B
n, J.; Ermolaeva, M.; White, O.; Salzberg, S.L.; Shapiro, L.; Venter, J.C.; Fras
Proc. Natl. Acad. Sci. US.A. 98, 4136-4141, 2001
A;Title: Complete Genome Sequence of Caulobacter crescentus.
A;Reference number: A87249; MUID:21173698; PMID:11259647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Molecule type: DNA
A; Residues: 1-223 <KAN>
A; Cross-references: EMBL: AB009866; NID: d1204727; PIDN: BAA31890.1; PID: d1032851
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Cross-references: GB: AE005673; NID: 913425492; PIDN: AAK25684.1; GSPDB: GN00148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       C.Species: Staphylococcus aureus phage phi PVL
C.Date: 23-Apr.1999 #sequence_revision 23-Apr.1999 #text_change 11-May-2000
C.Accession: T00150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C;Species: Caulobacter crescentus
C;Date: 20-Apr-2001 *sequence_revision 20-Apr-2001 *text_change 10-May-2001
                                                                                                                                                                                                                 Length 174章
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          H87710
hypothetical protein CC3722 [imported] - Caulobacter crescentus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     44.8%; Score 43; DB 2; Length 344; Larity 72.7%; Pred. No. 29; Conservative 1; Mismatches 2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       hypothetical protein 17 - Staphylococcus aureus phage phi PVL
                                                                                                                                                                                                                                                                           4; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .;
'
                                                                                                                                                                                                              ;
                                                                                                                                                                                                              Score 43; DB 2
Pred. No. 13;
5; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 43; DB 2
Pred. No. 18;
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Gene: CC3722
C;Superfamily: phosphoglycerate dehydrogenase
                                                                                                                                                                                                                                                                               s,
                                                                                                                                                                                                                                                                                                                                         2 KVIAPRRLPDPQILKSD 18
                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity 57.1%;
Matches 8; Conservative
                                                                                                                                                                                                                 Query Match 44.8%;
Best Local Similarity 47.1%;
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | ||:| | |||
141 PNNLPNPSISNSDT 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6 PRRLPDPQILKSDT 19
                                                                                             A;Molecule type: mRNA
A;Residues: 1-138,'RRV' <VA2>
A;Cross-references: EMBL:246654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2 KVIAPRRLPDP 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          111 |:1111
KVIVTRKLPDP 33
A; Reference number: S49580
A; Accession: S49580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
Matches 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-344 <STO>
                                                             A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Accession: H87710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ద
                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Map position: 17pter-17qter
A;Introns: 46/3; 80/3; 117/1; 154/3; 200/1; 236/3; 279/1; 311/3; 393/3; 471/3; 548/3
A;Introns: 46/3; 80/3; 117/1; 154/3; 200/1; 236/3; 279/1; 311/3; 393/3; 471/3; 548/3
C;Gsuperfamily: granulin
C;Reywords: grycoprotein; tandem repeat
E;1-17/Domain: signal sequence #status predicted <NAT>
F;18-593/Product: granulin #status predicted <NAT>
F;18-593/Product: progranulin #status predicted <PRO>
F;18-44/Product: paragranulin #status experimental <PGR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Cross-references: EMBL:Z46654; PIDN:CAA86613.1
A;Experimental source: strain Marmande; Meloidogyne incognita-induced root knot Kyan der Eycken, W.; de Almeida Engler, J.; Inse, D.; van Montagu, M.; Gheysen, submitted to the EMBL Data Library November 1994
A;Description: A molecular study of Meloidogyne incognita-induced feeding sites.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Residues: 442-46, XDTSS', 456-458, DG' <BA4>
;Rardana, A.; Bagshawe, K.D.; Coles, B.; Read, D.; Taylor, M.
r. J. Cancer 67, 686-692, 1993
Tille: Characterisation of UGP and its relationship with beta-core fragment.
Reference number: A56873; MUID:93229246; PMID:8471426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C:Species: Iycopersicon esculentum (tomato)
C:Date: 30-Apr-1999 #sequence_revision 30-Apr-1999 #text_change 01-Dec-2000
C:Accession: T07099; S49580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       F;368/Binding site: carbohydrate (Asn) (covalent) #status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                  Molecule type: protein
Residues: 364-367,'X',369-385,'H',387-396 <BA3>
Note: this protein was purified and characterized as granulin C
Accession: D36698
                                                                                   A;Wolecule type: protein
A;Residues: 281-336 <BAT>
A;Note: this protein was purified and characterized as granulin
A;Accession: B36698
                                                                                                                                                                                                    Molecule type: protein
Residues: 206-218, 'M', 220-233 <BA2>
Note: this protein was purified and characterized as granulin Accession: C36698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 593;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7; Indels
      tle: Granulins, a novel class of peptide from leukocytes.
ference number: A36698; MUID:91097544; PMID:2268320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Note: sequence extracted from NCBI backbone (NCBIP:129524)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               58-113/Product: granulin G #status predicted <GRG>123-179/Product: granulin F #status predicted <GRE>206-261/Product: granulin B #status experimental <GRB>281-336/Product: granulin A #status experimental <GRA>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             #status experimental <GRC>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       F;364-417/Product: granulin C *status experimental <GF;442-496/Product: granulin D *status predicted <GRD>F;518-573/Product: granulin E *status predicted <GRE>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 1;
38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Molecule type: protein
A;Residues: 281-283,'X',285-289,'S',291-295 <KAR>
A;Experimental source: urine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        R; van der Eycken, W.V. submitted to the EWBL Data Library, August 1997 A; Reference number: 215918 A; Accession: T07099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 44;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A, Cross-references: GDB:136006; OMIM:138945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 late embryogenesis (Lea)-like protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EKAPAHLSLPDPQALKRD 363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 KKVIAPRRLPDPQILKSD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity 55.6%;
Matches 10; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Molecule type: protein
Residues: 442-446,'XDTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Residues: 1-174 <VAN>
                                                                Accession: A36698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Accession: A56873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Gene: GDB:GRN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         a
```

ö

Gaps

ö

Gaps

```
A;Map position: 2
A;Introns: 78/2; 606/1; 705/1; 737/3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      665 KPVMAPPVLPPPQQFKS 681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 KKŸIAPRRLPDPQILKS 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 43.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      43.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match (44.8%;
Best Local Similarity 58.8%;
Matches 10; (Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity 63.00
Best Local 7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               · || ||::| ||
148 LPQPQVIKIDT 158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9 LPDPQILKSDT 19
                                                                                                                                                                              C;Genetics:
A;Gene: At2g18910; F19F24.11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        C; Species: Synechocystis sp. A; Variety: PCC 6803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6 PRRLPDPQIL 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ouery Match
Best Local Similarity
Matches 7; Conserv
A; Molecule type: DNA
A; Residues: 1-753 <STO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Molecule type: DNA
A; Residues: 1-244 <KAN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Residues: 1-280 <COL>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Accession: D70987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                hypothetical protein At2g18910 [imported] - Arabidopsis thaliana
NyAltcrnate names: hypothetical protein F19F24.11
C; Species: Arabidopsis thaliana (mouse-ear cress)
C; Date: 19-Feb-1999 #sequence_revision 19-Feb-1999 #text_change 02-Feb-2001
C; Accession: T01619; B84570
R; Rounalsey, S.D.; Lin, X.; Ketchum, K.A.; Crosby, M.L.; Brandon, R.C.; Sykes, S.M.; Kaulsubnitted to the EMBL Data Library, April 1998 II BAC F19F24 genomic sequence.
A; Recreace number: 214153
A; Ccession: T01619
A; Status: translated from GB/EMBL/DDBJ
A; Status: translated from GB/EMBL/DDBJ
A; Molecule type: DNA
A; Residues: 1-753 < ROUS
A; Cross-references: EMBL:AC003673; NID:g3004543; PID:g3004565
A; Cross-references: EMBL:AC003673; NID:g3004543; PID:g3004565
A; Cross-references: EMBL:A: Shea, T.P.; Benito, M.I.; Town, C.D.; Fujii, C.Y.;
M.; Koo, H.; Moffat, K.S.; Cronin, L.A.; Shen, M.; VanAken, S.E.; Umayam, L.; Tallon, L.
Nature 402, 761-768, 1999
A; Tile: Sequence and analysis of chromosome 2 of the plant Arabidopsis thaliana.
A; Reference number: A8470; MUID:20083487; PMID:10617197
A; Reference number: A8450; MUID:20083487; PMID:10617197
                                                                                             ;Species: Schizosaccharomyces pombe;Date: 28-Oct-1995 #sequence_revision 03-Nov-1995 #text_change 10-Dec-1999
;Accession: S56142; A56166; T38697
;Accession: S56142; A56166; T38697
;Accession: S56142; A56166; T38697
;Barlatt, F.; Dignard, D.; Bergeron, J.J.M.; Thomas, D.Y.
MBO J. 14, 3064-3072, 1995
;Title: The calnexin homologue cnx1(+) in Schizosaccharomyces pombe, is an essential generation number: S56142; MUID:95347333; PMID:7621821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Residues: 1.560 <PAR>
(Cross references: EMBL:M98799; NID:g437733; PIDN:AAA79757.1; PID:g437734
(All and all a
- fission yeast (Schizosaccharomyces pombe)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Reference number: 21805
A; Accession: T38697
A; Status: preliminary; translated from GB/EMBL/DDBJ
A; Molecule type: DNA
A; Residues: 1-560 <BRO>
A; Cross references: EMBL:299568; PIDN:CAB16741.1; GSPDB:GN00066; SPDB:SPAC3C7.11c
A; Experimental source: strain 972h-; cosmid c3C7
C; Genetics:
A; Gene: SPDB:SPAC3C7.11c
A; Map position: 1
A; Map position:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Cross references: GB:013389; NID:9532789; PIDN:AAA68631.1; PID:9532790; Note: authors translated the codon GCA for residue 491 as Ser Brown, D.; Churcher, C.M.; Wood, V.; Barrell, B.G.; Rajandream, M.A. Libnitted to the EMBL Data Library, September 1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pred. No. 52;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 43;
                                              Alternate names: calnexin homolog cnx1
precursor cnx1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    44.8%;
50.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ||| :||| :| || :| || 274 APRMIPDPDAVKPE 287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5 APRRLPDPQILKSD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local Similarity
Matches 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Residues: 1-560 <JAN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        atus: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Status: preliminary
Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  lecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a
```

```
C; Accession: S; 4911
R; Kaneko, T.; Sato, S.; Kotani, H.; Tanaka, A.; Asamizu, E.; Nakamura, Y.; Miyajima o, K.; Okumura, S.; Shimpo, S.; Takeuchi, C.; Wada, T.; Watanabe, A.; Tamada, M.; Juba. Res. 3, 109-136, 1996
A; Title: Sequence analysis of the genome of the unicellular cyanobacterium Synechor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    R;Cole, S.T.; Brosch, R.; Parkhill, J.; Garnier, T.; Churcher, C.; Harris, D.; Gorć; Connor, R.; Davies, R.; Devlin, K.; Feltwell, T.; Gentles, S.; Hamlin, N.; Holroy Rajandream, M.A.; Rogers, J.; Rutter, S.; Seeger, K.; Skelton, S.; Squares, S. Nature 393, 537-544, 1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A.Authors: Sqares, R.; Sulston, J.E.; Taylor, K.; Whitehead, S.; Barrell, B.G.
A;Title: Deciphering the biology of Mycobacterium tuberculosis from the complete ge
A;Reference number: A70500; MUID:98295987; PMID:9634230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Cross-references: GB:295890; GB:AL123456; NID:g3242245; PIDN:CAB09340.1; PID:e130
A;Experimental source: strain H37Rv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Cross-references: EMBL:D90909; GB:AB001339; NID:91652844; PIDN:BAA17872.1; PID:d1
A;Note: the nucleotide sequence was submitted to the EMBL Data Library, June 1996
                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
A; Cross-references: GB: AE002093; NID: 93004565; PIDN: AAC09038.1; GSPDB: GN00139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Status: preliminary; nucleic acid sequence not shown; translation not shown Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            C;Date: 25-Apr-1997 #sequence_revision 25-Apr-1997 #text_change 08-Oct-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       C;Date: 17-Jul-1998 #sequence_revision 17-Jul-1998 #text_change 22-Oct-1999
                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  hypothetical protein s111950 - Synechocystis sp. (strain PCC 6803)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         probable plcD protein - Mycobacterium tuberculosis (strain H37RV)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 244;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 280;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Reference number: S74322; MUID:97061201; PMID:8905231
A; Accession: S74911
                                                                                                                                                                                                   ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 42; DB 2;
Pred. No. 29;
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 2;
                                                                                                                                                                                                ore 43; DB 2 ed. No. 73; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 42; DB 2
Pred. No. 34;
2; Mismatches
                                                                                                                                                                                                   Score 43;
Pred. No.
```

9 09:01:50 2003

Wed Jul

```
A; Molecule type: DNA
A; Residues: 1-10 <GAR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Accession: A15659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Accession: S40531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Accession: A00671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Cossart, P.
                                                                                                                                                                             Nalternate names: glycogenase
C;Species: Sulfolobus acidocaldarius
C;Species: Sulfolobus acidocaldarius
C;Date: 31-Jan-1997 #sequence_revision 27-Feb-1997 #text_change 20-Jun-2000
C;Accession: JC5132
R;Kobayashi, K.; Kato, M.; Miura, Y.; Kettoku, M.; Komeda, T.; Iwamatsu, A.
Biosci. Biotechnol. Biochem. 60, 1720-1723, 1996
A;Title: Gene analysis of trahalose-producing enzymes from hyperthermophilic archaea in
A;Reference number: JC5131; MUD:97141330; PMID:8987674
A;Accession: JC5132
A;Status: preliminary; nucleic acid sequence not shown
A;Relecule type: DMB
A;Residues: 1-556 cKOB>
A;Cross-references: DDBJ:D64131; NID:9987704; PIDN:BAA11011.1; PID:9987705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Authors: Sqares, R.; Sulston, J.E.; Taylor, K.; Whitehead, S.; Barrell, B.G. A; Title: Deciphering the biology of Mycobacterium tuberculosis from the complete genome A; Reference number: A70500; MUID:98295987; PMID:9634230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Cross-references: GB;Z80226; GB:AL123456; NID:g3261638; PIDN:CAB02375.1; PID:e266575; C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   thra bifunctional enzyme [validated] - Escherichia coli (strain K-12)
N;Alternate names: aspartokinase I / homoserine dehydrogenase I; protein f132
N;Contains: aspartate kinase (EC 2.7.2.4) I [validated]; homoserine dehydrogenase (EC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             R;Cole, S.T.; Brosch, R.; Parkhill, J.; Garnier, T.; Churcher, C.; Harris, D.; Gordon, Connor, R.; Davies, R.; Devlin, R.; Feltwell, T.; Gentles, S.; Hamlin, N.; Holroyd, Bajandream, M.A.; Rogers, J.; Rutter, S.; Seeger, K.; Skelton, S.; Squares, S. Nature 393, 537-544, 1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C;Species: Escherichia coli
C;Date: 31-Dec-1980 #sequence_revision 10-Oct-1997 #text_change 01-Mar-2002
C;Accession: B64720; S56629; A00671; A15659; A14560; S40531; I57719; I69970; I73480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Status: preliminary; nucleic acid sequence not shown; translation not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C;Species: Mycobacterium tuberculosis
C;Date: 17-Jul-1998 #sequence_revision 17-Jul-1998 #text_change 22-Oct-1999
C;Accession: D70709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C;Comment: This enzyme hydrolyzes glycosyltrehalose to liberate trehalose. C;Superfamily: trehalose trehalohydrolase C;Keywords: glycosidase; hydrolase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        hypothetical protein Rv0785 - Mycobacterium tuberculosis (strain H37RV)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 566;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 556;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .,
                                                                                                                                                          alpha-amylase (EC 3.2.1.1) - Sulfolobus acidocaldarius
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 42; DB 2
Pred. No. 75;
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 75;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB
76;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 42;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Experimental source: strain ATCC33909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     43.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity 55.6%;
Matches 10; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 KKVIAPRRLPDPQILKSD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              :|:|| || ||:
RVVAPHRLTDPK 483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2 KVIAPRRLPDPQ 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
| |:|||||:
|PYRVPDPQIM 264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Rest Local Similarity
'-Local 7; Conserve
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Accession: D70709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Gene: Rv0785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
```

```
R; Blattner, F.R.; Plunkett III, G.; Bloch, C.A.; Perna, N.T.; Burland, V.; Riley, A.; Rose, D.J.; Mau, B.; Shao, Y.
Science 277, 1453-1462, 1997
A; Title: The complete genome sequence of Escherichia coli K-12.
A; Reference number: A64720; MUID:97426617; PMID:9278503
A; Accession: B64720
A; Status: nucled: acid sequence not shown; translation not shown
A; Molecule type: DNA
A; Residues: 1-820 < CBLAT>
A; Cross-references: GB: ABCO0011; GB: U00096; NID: 91786181; PIDN: AAC73113.1; PID: 91
A; Experimental source: strain K-12, substrain Mol555
A; Experimental source: strain K-12, substrain Mol555
B; Burland, V.; Plunkett III, G.; Solfa, H.J.; Daniels, D.L.; Blattner, F.R.
Nucleic Acids Res. 23, 2105-2119, 1995
A; Title: Analysis of the Escherichia coli genome VI: DNA sequence of the region f
A; Accession: S56629
A; Accession: S56629
A; Accession: S56629
A; Status: nucleic acid sequence not shown; tränslation not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Molecule type: DNA
A; Residues: 1-10, 'L', 12-229, 'N', 231-374, 'L', 376-392, 'A', 394-405, 'L', 407-552, 'N', 5
A; Cross-references: GB:J01706; EMBL:V00360; NID:g147977; PIDN:AAA83914.1; PID:g14
A; Note: this sequence has been revised in reference A00671
B; Stbilli, L.; Le Bras, G.; Cossart, P.; Chalvignac, M.A.; Le Bras, G.; Brilley, I
B; Stbilli, L.; Le Bras, G.; Cossart, P.; Chalvignac, M.A.; Le Bras, G.; Brilley, I
B; Stbilli, L.; Le Bras, G.; Cossart, P.; Chalvignac, M.A.; Le Bras, G.; Brilley, I
B; Stbilli, L.; Le Bras, G.; Cossart, P.; Chalvignac, M.A.; Le Bras, G.; Brilley, I
B; Stbilli, L.; A; Steference number: A1560; MuID:80043179; PMID:387092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Molecule type: DNA
A; Residues: 1-229, 'N', 231-374, 'L', 376-392, 'A', 394-405, 'L', 407-552, 'N', 554-606, 'I'
A; Ratinka, M.; Cossart, P.; Sibilli, L.; Saint-Girons, I.; Chalvignac, M.A.; Le F
Rroc, Natl. Acad. Sci. U.S.A. 77, 5730-5733, 1980
A; Title: Nucleotide sequence of the thrA gene of Escherichia coli.
A; Reference number: A15659; MUID:81077247; PMID:7003595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Experimental source: strain K-12
R; Cossart, P.; Katinka, M.; Yaniv, M.
Mol. Gen. Genet. 175, 39-44, 1979
Mylitle: Construction and expression of a hybrid plasmid containing the Eschericl A; Reference number: I57719; MUD:80077291; PMID:390305
A; Accession: I57719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A,Wolecule type: DNA
A,Residues: 1-820 <BURS.
A,Gross-references; EMBL:U14003; NID:g1263172; PIDN:AAA97301.1; PID:g537245
A,Note: the nucleotide sequence was submitted to the EMBL Data Library, August 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Molecule type: protein
A; Residues: 51-112, °E',114-129 <SIB>
R; Yura, T.; Morl, H.; Magai, H.; Nagat, T.; Ishihama, A.; Fujita, N.; Isono, K.;
Rubnitted to the EMBL Data Library, December 1992
A; Description: Systematic sequencing of the Escherichia coli genome: analysis of
A; Reference number: $40531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Molecule type: DNA
A; Residues: 1-10, 'L', 12-229, 'N', 231-374, 'L', 376-392, 'A', 394-405, 'L', 407-552, 'N',!
A; Cross-references: EMBL: D10483; NID: 9216434; PIDN: BAA01286.1; PID: 9216435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7. Biol. Chem. 257, 3896-3904, 1982
A; Fitch: Initiation, pausing, and termination of transcription in the threonine of A; Reference number: 155222; WUID:82142573; PMID:6277952
A; Accession: 169970
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RiLynn, S.P.; Bauer, C.E.; Chapman, K.A.; Gardner, J.F.
J. Wol. Biol. 183, 529-541, 1985
A;Title: Identification and characterization of mutants affecting transcription
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              unpublished results, cited by Zakin, M.M., Duchange, N., Ferrara, P., and Cohen, A;Reference number: A00671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A.Molecule type: DNA
A.Residues: 553-586,'IT' <COS2>
A.Cross-references: GB:M10644; NID:9147982; PIDN:AAA24671.1; PID:9147983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Cross-references: EMBL: X68872; NID: 943073; PIDN: CAA48734.1; PID: 943075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Status: preliminary; translated from GB/EMBL/DDBJ
```

```
A; Description: as homoserine dehydrogenase catalyzes the reduction by NADH of aspartate A; Pathway: glycine metabolism; serine metabolism; threonine biosynthesis C; Superfamily: thrA bifunctional enzyme; aspartate kinase homology; homoserine dehydroge C; Superfamily: thrA bifunctional enzyme; aspartate kinase homology; homoserine dehydrogenase; F;1-460/Domain: aspartate kinase homology <br/>
F;460/Domain: aspartate kinase homology <br/>
F;463-719/Domain: homoserine dehydrogenase homology <br/>
F;467-495/Region: beta-alpha-beta NAD(P) nucleotide-binding fold
                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Description: as aspartate kinase, catalyzes the phosphorylation by ATP of aspartate A; Pathway; aspartate metabolism A; Note: regulated allosterically by L-threonine C; Function: <HON>
                                                                                                                                        A;Molecule type: DNA
A;Residues: 1-10 <LIN>
A;Cross-references: GB:M28570; NID:g290476; PIDN:AAA24673.1; PID:g290478
C;Genetics:
A;Reference number: 156399; MUID:85264808; PMID:2410621
A;Accession: 173480
                                                                                    A;Status: translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                      A;Gene: thrA; thrAl; thrA2
A;Map position: 0 min
C;Function: <ASP>
```

Gaps

ő

Score 42; DB 1; Length 820; Pred. No. 1.2e+02; 4; Mismatches 1; Indels

Query Match 43.8%; Best Local Similarity 58.3%; Matches 7; Conservative Search completed: July 8, 2003, 16:29:22 Job time: 22.2436 secs

6 PRRLPDPQILKS 17 ||::|| ::||| 237 PRQVPDARLLKS 248

9 9

Wed Jul

GenCore version 5.1.6 Copyright (c) 1993 - 2003 Compugen Ltd.

OM protein - protein search, using sw model

July 8, 2003, 16:16:30; Search time 9.25641 Seconds (without alignments) 85.136 Million cell updates/sec Run on:

US-09-824-647-3 96 1 KKVIAPRRLPDPQILKSDT 19 Title:

Perfect score: Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

112892 seqs, 41476328 residues Searched: Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

SwissProt\_40:\* Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

#### SUMMARIES

		•			SUMMAKIES		
Result		Ouerv	•				
No.	Score	Match	Length DB	80	QI	Description	
-	89	92.7	589	-	GRN_MOUSE	P28798 mus musculu	
7	62	64.6	588	Н	GRN_RAT	P23785 r granulins	
e	46	47.9	824	-	AD08_HUMAN	P78325 homo sapien	
4	44.5	46.4	256	Н	RHLG_PSEAE	g	
S	44	45.8	593	П	GRN_HOMAN	P28799 h granulins	
9	43	44.8	260	П	CALX_SCHPO	P36581 schizosacch	
7	42	43.8	514	٦	PHLD_MYCTU	Q9xb13 mycobacter1	
80	42	43.8	795	٦	PGN_HUMAN		
6	42	43.8	820	Н	AK1H_ECOLI	P00561 escherichia	
10	42	43.8	867	Н	POL_SRV2	P51517 simian retr	
11	42	43.8	874		DNAB_MYCTU	-	
12	41.5	43.2	622	<b>H</b>	- 1		
13	41.5	43.2	622	H	- 1		
14	41.5	43.2	622	-	AMA1_PLAFH		
15	41	42.7	490	-	SYE_BORBU		
16	40.5	42.2	643	-			
17.	40.5	42.2	1025	-		P38065 saccharomyc	
18	40	41.7	241	-	OMPA_ESCBL		
19	40	41.7	256	-	6PGL_CHLMU	Q9pkk7 chlamydia m	
20	40	41.7	257	7	VGLG_BRSVS		
21	40	41.7	293	Н	CGD3_RAT		
22	40	41.7	328	-	GALE_CORDI	-	
23	40	41.7	330	-	UL16_HSVSA	, Q01022 herpesvirus	
24	40	41.7	405	-	Y927_PYRAB	_	
25	40	41.7	203	Н	VL1_HPV26		
56	40	41.7	534	-	IF2P_SULAC		
27	40	41.7	819	-	AK1H_SERMA		
78	40		830	-	GYRA_BUCAI	_	
29	40		970	-	Y852_HUMAN		
30	39	40.6		-	PSAG_CHLRE	_	
31	39	40.6	268	Н	LPXH_RALSO	Q8y081 ralstonia s	
32	39	40.6		-	GALE_STRLI		
33	39	40.6	491	Н	UNC3_CAEEL	Q93705 caenorhabdi	

	P36338 bovine herp	P46519 glycine max	human	P26535 human papil	P50489 plasmodium	P50490 plasmodium.	~,	P49706 gallus gall	_	-	P50006 spirulina p	
A AOUAE	UL47_HSVBC	4_SOYBN	_HPV31	HPV58	-PLAFC	-PLAFG	2_SYNY3	2_CHICK	3_HUMAN	3_MOUSE	3_SPIPL	٠.
PBP	UL4	LEI	VLI	VI.1	AMA	AWA	EXB	CGD	CGD	CGD	. ATP	
726 1	739 1	152	504	524 1	622 1	622 1	227 1	291	292	292 1	310	
40.6	40.6	40.1	40.1	40.1	40.1	40.1	39.6	39.6	39.6	39.6	39.6	, 1.
39	36	38.5	38.5	38.5	38.5	38.5	38	38	38	38	38	
34	32	36	37	38	36	40	41	42	43	44	45	

## ALIGNMENTS

7

-! - PTM: GRANULINS ARE DISULFIDE BRIDGED.

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bateman A., Belcourt D.R., Bennett H.P., Lazure C., Solomon S.; "Granulins, a novel class of peptide from leukocytes."; Blochem. Blophys. Res. Commun. 173:1161-1168(1990).
-i- FUNCTION: GRANULINS HAVE POSSIBLE CYTOKINE-LIKE ACTIVITY. THEY MAY PLAY A ROLE IN INFLAMMATION, WOUND REPAIR, AND TISSUE REMODELING.
-i- TISSUE SPECIFICITY: UBIQUITOUS; MOST ABUNDANT IN THE SPLEEN AND SEVERAL TISSUES OF ENDOCRINE SIGNIFICANCE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Plowman G.D., Green J.M., Neubauer M.G., Buckley S.D., McDonald V.L., Todaro G.J., Shoyab M.;

"The epithelin precursor encodes two proteins with opposing activities on epithelial cell growth.";
J. Biol. Chem. 267:13073-13078(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-DEC-1992 (Rel. 24, Last sequence update)
16-CCT-2001 (Rel. 40, Last annotation update)
Granulins precursor (Acrogranin) [Contains: Granulin 1 (Granulin G);
Granulin 2 (Granulin F); Granulin 3 (Granulin B) (Epithelin 2);
Granulin 4 (Granulin A) (Epithelin 1); Granulin E)].
Granulin 6 (Granulin D); Granulin 7 (Granulin E)].
                                                                                                                                             (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE OF 204-225 AND 279-299.
MEDLINE-91045907; PubMed-2236009;
Shoyab M., McDonald V.L., Byles C., Todaro G.J., Plowman G.D.;
"Epithelins 1 and 2: isolation and characterization of two
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bhandari V., Glaid A., Bateman A.; "The complementary deoxyribonucleic acid sequence, tissue distribution, and cellular localization of the rat granulin
                                                                                                                                                                                                                                                                                                                                                  Length 589;
                                                                                                                                                                                                                                                                                                                         Score 89; DB 1; Length 505
Pred. No. 6.3e-07;
                                                                                                                                          N-LINKED (GLCNAC. . .) (POT.
L -> R (IN REF. 2).
W; 1DE8229C413CB787 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A., AND SEQUENCE OF 204-259 AND 278-334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cysteine-rich growth-modulating proteins.";
Proc. Natl. Acad. Sci. U.S.A. 87:7912-7916(1990)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  588 AA
                                                                                                                                                                                                                                                                                                                                                                                                            0; Mismatches
                                                                                      GRANULIN 6
GRANULIN 7
                                                          GRANULIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Endocrinology 133:2682-2689(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TISSUE-Kidney;
MEDLINE-94062640; PubMed-8243292;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TISSUE=Kidney;
MEDLINE-92317004; PubMed-1618805;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE-91097544; PubMed-2268320;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 KKVIAPRRLPDPQILKSDT 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Created)
                                                                                                                                                                                                                                                                                              63458 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                18; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-NOV-1991 (Rel. 20, 01-DEC-1992 (Rel. 24, 16-OCT-2001 (Rel. 40,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE OF 278-328.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FISSUE-Bone marrow;
                                                                                                                                                                                                                                                                                                 ¥.
                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID-10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             precursor.
                                                                                                                                                                      CARBOHYD
CARBOHYD
CARBOHYD
CONFLICT
SEQUENCE
                                                                                                                                                CARBOHYD
                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GRN_RAT
P23785;
                                                                                         PEPTIDE
                                                                                                                    PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A PART BAR REPRESENTATION OF STREET BAR REPRE
55111111118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ð
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@lib-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
ADBM 8 precursor (RC 34-24--) (A disintegrin and metalloproteinase
domain 8) (Cell surface antigen MS2) (CD156a antigen) (CD156).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Yoshiyama K., Higuchi Y., Kataoka M., Matsuura K., Yamamoto S.; CD156 (human ADAM8): expression, primary amino acid sequence, and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Chordata; Craniata; Vertebrata; Euteleostomi;
Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 588;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                     113D434F7E099B31 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                               (IN REF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 1;
                                                                                                                                                                                                                                                                                                                                                  N-LINKED (GLCNAC
N-LINKED (GLCNAC
N-LINKED (GLCNAC
S -> FP (IN REF.
TK -> SB (IN REF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0.016;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT; 824 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pred. No. 0.0; Mismatches
                                                                                                                                                                                                                                                    ACROGRANIN.
GRANULIN 1.
                                                                                                                                                                                                                                                                                                                            GRANULIN 6.
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 62;
                                                                                                                                                                                                                                                                            GRANULIN
GRANULIN
                                                                                                                                                                                                                                                                                                    GRANULIN 4
                                                                                                                                                                                                                                                                                                                                                                                                              O M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    rissue-blood;
MEDLINE-97271556; PubMed-9126482;
                                                                                                                                                                                                    100277; GRAN; 7.
PS00799; GRANULINS; 7.
Repeat; Glycoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        343 KKVTASLSLPDPQILKND 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 KKVIAPRRLPDPQILKSD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                                                                                                                                                                         IK; E30096; E30096.
InterPro; IPR000118; Granulin
                                                                                                                                                                                                                                                                                                                                                                                                                                      63369 MM;
                                                                                                                    EMBL; M97750; AAA16903.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                             64.6%;
ilarity 72.2%;
Conservative
                                                                                                                                CAA44198.1; -
                                                                                                                                                                                         Pfam; PF00396; granulin; 7. SMART; SM00277; GRAN; 7.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens (Human)
                                                                                                                                                                  PIR; E36698; E36698
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
Matches 13; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                      588 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene location.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ADAM8 OR MS2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AD08_HUMAN
P78325;
                                                                                                                                                                                                                               Cytokine;
                                                                                                                                                                                                                                                                                                                                         PEPTIDE CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                 CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                              CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                  PROSITE;
                                                                                                                                                                                                                                                                               PEPTIDE
                                                                                                                                                                                                                                                                                                                            PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADOB HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 3
ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GRNL HUMAN STANDARD; PRT; 593 AA. P28799; P23781; P23784; Q9BWE7; P28799; P23781; P23782; P23784; Q9BWE7; P01-NOV-1991 (Rel. 20, Created) PLDEC-1992 (Rel. 24, Last sequence update) 15-JUN-2002 (Rel. 41, Last annotation update) Granulins precursor (Acrogranin) [Contains: Paragranulin; Granulin 1 (Granulin G); Granulin 7); Granulin 7); Granulin 8); Granulin 4 (Granulin A); Granulin 5 (Granulin C); Granulin 6 (Granulin C)
                                                                                                                                               Campos-Garcia J., Caro A.D., Najera R., Miller-Maler R.M., Al-Tahhan R.A., Soberon-Chavez G.; "The Pseudomonas aeruginosa rhlG gene encodes an NaDPH-dependent beta-ketoacyl reductase which is specifically involved in rhamnolipid synthesis.";
                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
STRAIN-ATCC 15692 / PAO1;
WEDLINE-20437337; PubMed-10984043;
Stover C.K., Pham X.-O.T., Erwin A.L., Mizoguchi S.D., Warrener P.,
Stover C.K., Pham X.-O.T., Erwin A.L., Mizoguchi S.D., Warrener P.,
Garber R.L., Goltry L., Tolentino E., Westbrock-Wadman S., Idan Y.,
Brody L.L., Coulter S.N., Folger K.R., Kas A., Larbig K., Lim.R.M.,
Smith K.A., Spencer D.H., Wong G.K.-S., Wu Z., Paulsen I.T.,
Reizer J., Saier M.H., Hancock R.E.W., Lory S., Olson M.V.;
"Complete genome sequence of Pseudomonas aeruginosa PAO1, an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -i- FUNCTION: REQUIRED FOR THE SINTHESIS OF THE BETA-HYDROXY ACID MOIETY OF RHAMNOLIPIDS.
-i- CATALYTIC ACTIVITY: (3R)-3-hydroxyacyl-[acyl-carrier protein] +
NADP(+) - 3-oxocyl-[acyl-carrier protein] + NADPH.
-i- PATHWAY: Rhamnolipids fatty acid moiety biosynthesis.
-i- SIMILARITY: BELONGS TO THE SHORT-CHAIN DEHYDROGENASES/REDUCTASES
  Bacteria; Proteobacteria; gamma subdivision; Pseudomonadaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5; DB 1; Length 256;
4.7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Complete proteome.

8 NADP (BY SIMILARITY).
0 BY SIMILARITY.
6830 MW; 3DB7B481F34C89A3 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 44.5;
Pred. No. 4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    189 VIAPGREPSRMTRHIANDPQALEADS 214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRINTS; PR00080; SDRFAMILY.
PROSITE; PS00061; ADH_SHORT; FALSE_NEG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3 VIAPRRLP------DPQILKSDT 19
                                                                                                                                                                                                                                                                      . Bacterioj. 180:4442-4451(1998).
                                                                                      SEQUENCE FROM N.A.
STRAIN-ATCC 15692 / PAO1;
MEDLINE-98389657; PubMed-9721281;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro; IPR002198; ADH_short.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; AF148964; AAD53514.1; -. EMBL; AE004760; AAG06775.1; -. HSSP; P50162; 1AE1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    26830 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pfam; PF00106; adh_short; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity 42.3%;
Matches 11; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Nature 406:959-964(2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  opportunistic pathogen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Oxidoreductase; NADP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            14
160
256 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (SDR) FAMILY.
                                                 NCBI_TaxID=287;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NP_BIND
ACT_SITE
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 5
GRN_HUMAN
    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BE BE BE BE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                         This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss institute of Bioinformatics and the EMBL outstation the European Bioinformatics institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to licensee(18b-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RHIG_PSEAE STANDARD; PRT; 256 AA.

OBRFT1;
16-OCT-2001 (Rel. 40, Created)
16-OCT-2001 (Rel. 40, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Rhamnoliplas blosynthesis 3-oxoacy1-[acy1-carrier protein] reductase
(EC 1.1.1100) (3-ketoacy1-acy1 carrier protein reductase).

RHIG OR PA3387.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N-LINKED (GLCNAC. . .) (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 1; Length 824;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ZINC (CATALYTIC) (PROBABLE).
ZINC (CATALYTIC) (PROBABLE).
SIMILARITY: CONTAINS 1 DISINTEGRIN DOMAIN.
DATABASE: NAME-PROW; NOTE-CD guide CD156 entry;
WWW-"http://www.ncbi.nlm.nlh.gov/prow/cd/cd156.htm".
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ZINC (CATALYTIC) (PROBABLE)
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PROSITE; PS01186; EGF_2; UNKNÖWN_1.
PROSITE; PS00142; ZINC_PROTEASE; 1.
HYDOLase; Metalloprotease; Zinc; Signal; Glycoprotein;
Hydromembrane; Antigen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EXTRACELLULAR (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LINKED (GLCNAC. . .) (PC 5DF8E05F30DF479E CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DISINTEGRIN-LIKE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    METALLOPROTEASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  47.9%; Score 43.8%; Pred. No. 9.8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PROSITE; PS50215; ADAM MEPRO; 1.
PROSITE; PS00427; DISINTEGRIN_1; FALSE_NEG-
PROSITE; PS50214; DISINTEGRIN_2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BY SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro; IPR002870; Pep_M12B_propep.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADAM 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                           InterPro; IPR001590; Reprolysin.
InterPro; IPR000130; Zn_MTpeptdse.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pfam; PF00200; disintegrin; 1.
Pfam; PF01421; Reprolysin; 1.
Pfam; PF01562; Pep_M12B_propep; 1.
Probom; PD000664; Disintegrin; 1.
                                                                                                                                                                                                                                                                                                                                                                                            InterPro; IPR001762; Disintegrin.
                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro; IPR000561; EGF-11ke.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      88673 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               : |: ||||| |:: ::
EVVLPRRLPGPRVRRA 45
                                                                                                                                                                                                                                                                           EMBL; D26579; BAA05626.1; -. HSSP; P18619; 1FVL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2 KVIAPRRLPDPQILKS 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SMART; SM00050; DISIN; 1.
SMART; SM00181; EGF; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity 43...
7; Conservative
                                                                                                                                                                                                                                                                                                                          MEROPS; M12.208; -. Senew; BGNC:215; ADAM8.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            612
824 AA;
                                                                                                                                                                                                                                                                                                                                                                         MIM; 602267;
```

DOMAIN TRANSMEM

SIGNAL

ACT\_SITE

(ETAL

DOMAIN

DOMAIN

CARBOHYD SEQUENCE

RESULT 4
RHLG\_PSEAE

á 셤 DISULFID CARBOHYD CARBOHYD CARBOHYD Gaps

3; Indels

```
ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This SWISS-PROT entry is copyright. It is produced through a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (see http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on it use by non-profit institutions as long as its content is in no we
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Plowman G.D., Green I.M., Neubauer M.G., Buckley S.D., McDonald V.L., Todaro G.J., Shoyab M.;
"The epithelin precursor encodes two proteins with opposing activities on epithelial cell growth.";
J. Biol. Chem. 267:13073-13078(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TISSUE SPECIFICITY: IN MIELOGENOUS LEUKEMIC CELL LINES OF PROMONOCTIC, PROMYELOCYTIC, AND PROBRYTHROID LINEAGE, IN FIBROBLASTS, AND VERY STRONGLY IN EPITHELIAL CELL LINES. PRESENT IN INFLAMMATORY CELLS AND BONE MARROW. HIGHEST LEVELS IN KIDNEY. PTM: GRANULINS ARE DISULFIDE BRIDGED.
                                                                                                               TISSUE-bone marrow;
MEDLINE-92179253; PubMed-1542665;
Bhandari V., Palfree R.G.E., Bateman A.;
Isolation and sequence of the granulin precursor cDNA from human bone marrow reveals tandem cysteine-rich granulin domains.";
Proc. Natl. Acad. Sci. U.S.A. 89:1715-1719(1992).
                     Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
NCBI_raxID=9606;
                                                                                                                                                                                                                                           Bhandari V., Bateman A.; "Structure and chromosomal location of the human granulin gene."; Blochem. Biophys. Res. Commun. 188:57-63(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                  TISSUE-Brain;
Yu W., Gibbs R.A.;
Submitted (MAR-1998) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Submitted (JUL-2001) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE OF 206-233; 281-336; 364-396 AND 442-447.
                                                                                                   SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A. (ISOFORMS 1 AND 2).
TISSUE=Cervix, and Lung;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; M75161; AAA58617.1; ALT_SEQ.
EMBL; X62320; CAA44196.1; -.
                                                                                                                                                                                                               REVISIONS, SEQUENCE FROM N.A. MEDLINE-93038704; Pubmed-1417868;
                                                                                                                                                                                                                                                                                                                                 MEDLINE-92317004; PubMed-1618805;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; AF055008; AAC09359.1; --
EMBL; BC000324; AAH00324.1; --
EMBL; BC010577; AAH10577.1; --
Granulin 7 (Granulin E)].
                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PIR; A38118; GYHU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Strausberg R.;
                                                                                                                                                                                                                                                                                                                      LISSUE=Kidney
```

```
Jannatipour M., Rokeach L.A.;
"The Schizosaccharonyces pombe homologue of the chaperone calnexin is assential for viability."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDINE-95347333; PubMed+7621821;
Parlati F., Dignard D., Bergeron J.J.M., Thomas D.Y.;
"The calnexin homologue cnx1+ in Schizosaccharomyces pombe, is an essential gene which can be complemented by its soluble ER domain.";
EMBO J. 14:3064-3072(1995).
                                                                                                                                                                                                                                                                                                                            (POTENTIAL).
                                                                                                                                                                                                                                                                                                (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ó
                                                                          DOS.77; GRANULINS; 7.
S80799; GRANULINS; 7.
Repeat; Glycoprotein; Signal; Alternative splicing
                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 593;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                 S -> H (IN REF. 6).
W -> H (IN REF. 6).
4E402BDB16DE2819 CRC64;
                                                                                                                                                                                                                                                                                                                N-LINKED (GLCNAC. . .).
N-LINKED (GLCNAC. . .) (
MISSING (IN ISOFORM 2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Schizosaccharomyces pombe (Fission yeast).
Eukaryota; Fungi; Ascomycota; Schizosaccharomycetes;
Schizosaccharomycetales; Schizosaccharomycetaceae;
                                                                                                                                                                                                                                                                                             (GLCNAC.
                                                                                                                                                                                                                                                                    (GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 44; DB 1;
Pred. No. 15;
; Mismatches
                                                                                                                                                                                                                                                                                                                                                                   FTIG-VAR_003445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (Rel. 29, Last sequence update) (Rel. 41, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                560 AA.
                                                                                                                                       ACROGRANIN.
PARAGRANULIN
                                                                                                                                                                                             GRANULIN 3.
GRANULIN 4.
GRANULIN 5.
GRANULIN 6.
                                                                                                                                                                                                                                                                  N-LINKED (
N-LINKED (
N-LINKED (
N-LINKED (
                                                                                                                                                                                   GRANULIN
                                                                                                                                                                    GRANULIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           essential for viability.";
J. Biol. Chem. 270:4845-4853(1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRAIN-972;
MEDLINE-21848401; PubMed=11859360;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE=95181485; PubMed=7876257;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-JUN-1994 (Rel. 29, Created)
01-JUN-1994 (Rel. 29, Last sequ
15-JUN-2002 (Rel. 41, Last anno
                                InterPro; IPR000118; Granulin.
Pfam; PF00396; granulin; 7.
SMART; SM00277; GRAN: 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 KKVIAPRRLPDPQILKSD 18
                                                                                                                                                                                                                                                                                                                                                                                                               63473 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 45.8%;
Best Local Similarity 55.6%;
Matches 10; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OR CNX1 OR SPAC3C7.11C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Calnexin homolog precursor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STANDARD;
PIR; JC1284; JC1284.
Genew; HGNC:4601; GRN.
MIM; 138945; -.
                                                                                                                                                                                                                                      7496
                                                                                                                                                                                                                                                                                                                                                                                                  386
593 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Schizosaccharomyces.
NCBI_TaxID-4896;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                PROSITE; PS00799;
                                                                                                           Polymorphism
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CALX SCHPO
                                                                                                 Cytokine;
                                                                                                                                                                                                                                                                                                                                                                                                 CONFLICT
                                                                                                                                                                                                                                                                                  CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                   CONFLICT
                                                                                                                                                                                                                                                                                                              PARBOHYD
                                                                                                                                                                                                                                                                                                                            CARBOHYD
                                                                                                                                                                                                                                                                                                                                          /ARSPLIC
                                                                                                                                                                                                                                                                    PARBOHYE
                                                                                                                                                     PEPTIDE
                                                                                                                                                                    EPTIDE
                                                                                                                                                                                   EPTIDE
                                                                                                                                                                                                               IDE
                                                                                                                                                                                                                                           EPTIDE
                                                                                                                                                                                                                                                      EPTIDE
                                                                                                                                                                                                                                                                                                                                                         ARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            P36581;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CALX_SCHPO
                                                                                                                                          CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 6
```

ô

Length 560;

Score 43; DB 1;

```
RA Wood V., Gwilliam R., Rajandream M.A., Lyne M., Lyne R., Stewart A.,
RA Squros J., Peat N., Hayles J., Baker S., Basham D., Bowman S.,
RA Brooks K., Brown D., Brown S., Chillingworth T., Churcher C.M.,
RA Collins M., Connor R., Cronin A., Davis P., Feltwell T., Fraser A.,
RA Gentles S., Goble A., Hamlin N., Harris D., Hidalgo J., Hodgson G.,
RA James K., Jones L., Jones M., Leather S., McDonald S., McGrean J.,
RA Mconey P., Moule S., Mungall K., Murphy L., Niblett D., Odell C.,
RA Mconey P., Woule S., Mungall K., Murphy L., Niblett D., Odell C.,
RA Stelton J., Simmonds M., Squares R., Squares S., Stevens K.,
Relton J., Simmonds M., Squares R., Squares S., Stevens K.,
Relton J., Simmonds M., Squares R., Robben J., Grymonprez B.,
RA Woodward J., Volckaert G., Aert R., Robben J., Grymonprez B.,
RA Weltjens I., Vanstreels E., Rieger M., Schaefer M., Mueller-Auer S.,
RA Gabel C., Fuchs M., Fritzc C., Helzer B., Moestl D., Hilbert H.,
R Eger P., Zimmenman W., Wedler H., Reinhardt R., Pohl T.M.,
R Eger P., Zimmenman W., Wedler H., Rambutt R., Purnelle S.,
RA Gallbert F., Aves S.J., Xiang Z., Hunt C., Moore K., Hurst S.M.,
RA Dominguez A., Revuelta J.L., Moreno S., Gloux S., Lelaure V., Mottler S.,
RA Cortutti L., Lowe T., McCombie W.R., Paulsen I., Potashkin J.,
R Shakovski G.V., Ussery D., Barrell B.G., Nurse P.;
R Shakovski G.V., Ussery D., Barrell B.G., Nurse P.;
R Hure 41581-800(2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@lsb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SYNTHESIZED GLYCOPROTEINS IN THE ENDOPLASMIC RETICULUM. IT MAY ACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IN ASSISTING PROTEIN ASSEMBLY. AND/OR IN THE RETEMTION WITHIN THE ER OF UNASSEMBLED PROTEIN SUBUNITS. IT SEEMS TO PLAY A MAJOR ROLE IN THE QUALITY CONTROL APPRATUS OF THE ER BY THE RETENTION OF INCORRECTLY FOLDED PROTEINS.

SUBCELLULAR LOCATION: Type I membrane protein. Endoplasmic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N-LINKED (GLCNAC. . .) (POTENTIAL).
E3B20877333E9123 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FUNCTION: CALCIUM-BINDING PROTEIN THAT INTERACTS WITH NEWLY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PROSITE; PS00803; CALRETICULIN_1; 1.
PROSITE; PS00804; CALRETICULIN_2; 1.
PROSITE; PS00805; CALRETICULIN_2; 1.
Calcium-binding; Endoplasmic reticulum; Transmembrane; Signal;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           X APPROXIMATE REPEATS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -1- SIMILARITY: BELONGS TO THE CALRETICULIN FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LUMENAL (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CALNEXIN HOMOLOG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             InterPro; IPR001580; Calreticulin.
Pfam; PF00262; calreticulin; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PD001866; Calreticulin; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Glycoprotein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRINTS; PR00626; CALRETICULIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; M98799; AAA79757.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; U13389; AAA68631.1
EMBL; 299568; CAB16741.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Repeat; Chaperone;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       reticulum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
TRANSMEM
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ProDom;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CHAIN
```

63466 MW;

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outsiation-the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -i- SIMILARITY: BELONGS TO THE BACTERIAL PHOSPHOLIPASE C FAMILY.
-i- CAUTION: The gene coding for this protein seems to be defective in strain H37Rv where it is interrupted by the insertion of an IS6110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SPECIES—W.tuberculosis; STRAIN=H37Rv;
MEDLINE=98295987; PubMed=9634230;
Cole S.T., Brosch R., Parkhill J., Garnier T., Churcher C., Harris D.,
Gordon S.V., Eiglmeier K., Gas S., Barry C.E. III, Tekala F.,
Badcock K., Basham D., Brown D., Chillingworth T., Connor R.,
Davies R., Devila K., Feltwell T., Gentles S., Hamlin N., Holroyd S.,
Hornsby T., Jagels K., Krogh A., McLean J., Moule S., Murphy L.,
Oliver S., Osborne J., Quall M.A., Rajandream M.A., Rogers J.,
Rutter S., Seeger K., Skelton S., Squares S., Squares R.,
Sulston J.E., Taylor K., Whitehead S., Barrell B.G.;
"Deciphering the biology of Mycobacterium tuberculosis from the
complete genome sequence."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SPECIES-M.tuberculosis; STRAIN-CDC 1551 / Oshkosh; Fleischmann R.D., Alland D., Eisen J.A., Carpenter L., White O., Peterson J., Dobboy R., Gwinn M.L., Haft D., Hickey E., Kolonay J.F., Nelson W.C., Umayam L.A., Ermolaeva M.D., Salzberg S.L., Delcher A., Utterback T., Weidman J., Khouri H., Gill J., Mikula A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "Identification of variable regions in the genomes of tubercle bacilliusing bacterial artificial chromosome arrays.";
Mol. Microbiol. 32:643-655(1999).
                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                               Bacteria; Actinobacteria; Actinobacteria (class); Actinobacteridae;
Actinomycetales; Corynebacterineae; Mycobacteriaceae; Mycobacterium.
NCBL_TaxID=1773, 1765;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -1- CATALTIC ACTIVITY: A phosphatidylcholine + H(2)0 = 1,2-diacylglycerol + choline phosphate.
-1- MISCELLANEOUS: POLYMORPHISM WAS DISCOVERED IN THE PHOSPHOLIPASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             genome comparison of Mycobacterium tuberculosis clinical and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SPECIES-M. bovis; STRAIN-BCG / Pasteur;
MEDLINE-99255698; PubMed-10320585;
Gordon S.V., Brosch R., Billault A., Garnier T., Elglmeier K.,
                                     ö
                                                                                                                  35.
                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   laboratory strains.";
Submitted (APR-2001) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                         09XB13; 006792;
16-0CT-2001 (Rel. 40, Created)
16-0CT-2001 (Rel. 40, Last sequence update)
16-0CT-2001 (Rel. 40, Last annotation update)
phospholipase C 4 precursor (EC 3.1.4.3).
PLCD OR RV1755C OR MT1799 OR MTCY28.21C.
                                                                                                                                                                                                                        514 AA.
                                       3; Mismatches
                    Pred. No.
                                                                                                                                                                                                                      PRT;
                                                                                                                                                                                                                                                                                                                                                             Mycobacterium tuberculosis, and
44.8%;
50.0%;
                                                                                                 5 APRRIPDPQILKSD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Nature 393:537-544(1998).
                                       7; Conservative
                                                                                                                                                                                                                      STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                      Mycobacterium bovis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
  Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SECUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PLCD REGION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     element.
                                                                                                                                                                                                                        PHI.D_MYCTU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bishai W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ŝ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Whole
                                                                                                                                                                                                     PHLD_MYCTU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cole
                                         Matches
                                                                                                                                                                                   RESULT 7
                                                                                                                                                                                                                                             ð
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This SWISS-PROT entry is copyright. It is produced through a collaboration
     (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          reen the Swiss Institute of Bioinformatics and the EMBL outstation European Bioinformatics Institute. There are no restrictions on it by non-profit institutions as long as its content is in no wa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
MEDIJNE=99408245; PubMed=10480368;
Settasatian C., Whitmore S.A., Crawford J., Bilton R.L.,
Cleton-Jansen A.-M., Sutherland G.R., Callen D.F.;
"Genomic structure and expression analysis of the spastic paraplegia gene, SPG7.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Casari G., De Fusco M., Clarmatori S., Zeviani M., Mora M., Fernandez P., De Michele G., Filla A., Cocozza S., Marconi R., Duerr A., Fontaine B., Ballabio A.; "Spastic paraplegia and OXPHOS impairment caused by mutations in
                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 paraplegin, a nuclear-encoded mitochondrial metalloprotease."; Cell 93:973-983(1998).
                                                                                                                                                                                                                                                                                                                                                        43.8%; Score 42; DB 1; Length 514; 70.0%; Pred. No. 26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Paraplegin (EC 3.4.24.-) (Spastic paraplegia protein 7)
                                                                                                                                                                                                                                                                          PHOSPHOLIPASE C 4.
9D99A466D312BA30 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -! - FUNCTION: PUTATIVE ATP-DEPENDENT PROTEASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              795 AA.
                                                                                                                                                                                                                                                                                                                                                                                                             2; Mismatches
     entities requires a license agreement (;
or send an email to license@lsb-sib.ch)
                                                                                                                                                                                                                                                   POTENTIAL.
                                                                                                                                                                                                                    Hydrolase; Signal; Complete proteome
                                                                                 EMBL; Z95890; CAB09340.1; ALT_SEQ.
EMBL; AE007040; AAK46072.1; -;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
MEDLINE-98297350; PubMed-9635427;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Created)
                                                                                                                                                                                                                                                                                                   55770 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Genet. 105:139-144(1999).
                                                                                                                                   EMBL; Y18606; CAB44656.1;
TIGR; MT1799; -.
Tuberculist; Rv1755c; -.
                                                                                                                                                                                                                                                                                                                                                                                 Best_Local Similarity 70.(
Matches 7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | |:|||||:
PYRVPDPQIM 498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PGN_HUMAN STANDARD
Q9UQ90; 075756;
16-0CT-2001 (Rel. 40, C
16-0CT-2001 (Rel. 40, L
15-JUN-2002 (Rel. 41, L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6 PRRLPDPQIL 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                514 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID-9606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PGN OR SPG7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        489
                                                                                                                                                                                                                                                                                                SEQUENCE
                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                   SIGNAL
                                                                                                                                                                                                                                                                            CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 8
PGN_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HTH.
SCOCO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEPT TO THE PROPERTY OF THE PR
```

```
ö
 is not removed. Usage by and for commercial agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Transmembrane; Hydrolase; Metalloprotease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Katinka M., Cossart P., Sibilli L., Saint-Girons I., Chalvignac M.A., 18 Bras G., Cohen G.N., Yaniv M.; Brucleotide sequence of the thra gene of Escherichia coll."; Proc. Natl. Acad. Sci. U.S.A. 77:5730-5733(1980).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          P00561; Q47659;
21-JUL-1986 (Rel. 01, Created)
21-JUL-1986 (Rel. 01, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Bifunctional aspartokinase/homoserine dehydrogenase I (AKI-HDI)
Includes: Aspartokinase I (EC 2.7.2.4); Homoserine dehydrogenase I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bacteria; Proteobacteria; gamma subdivision; Enterobacteriaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATP (POTENTIAL).
ZINC (CATALYTIC) (BY SIMILARITY).
BY SIMILARITY.
BY CIMILARITY.
G -> R (IN REF. 1).
DA63283387517226 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ouery Match 43.8%; Score 42; DB 1; Length 795; Best Local Similarity 55.6%; Pred. No. 43; Matches 10; Conservative 2; Mismatches 6; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             820 AA.
modified and this statement is not remorentities requires a license agreement ((or send an email to license@lsb-sib.ch)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                 InterPro; IPR003959; AAA_ATPase_centr.
InterPro; IPR000642; Peptidase_M41.
                                                                                                                                                                                JOINED.
                                                                                                                                                                                                              JOINED.
                                                                                                       JOINED.
                                                                                                                                     JOINED.
                                                                                                                                                                     JOINED
                                                                                                                                                                                                                                             JOINED
                                                                                                                                                                                                                                                           JOINED
                                                                                                                                                                                                                                                                           JOINED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE-81077247; PubMed-7003595;
                                                                                                                                                                                                                                                                                                                                                                                                                                               SMART; SM00382; AAA; 1.
TIGRFAMS; TIGR01241; FtsH_fam; 1.
                                                                                                                                                                                                                                                                                                                                                                   InterPro; IPR003593; AAA_ATPase.
                                                                                                                                                                                                                                                                                                                                                                                                              Pfam; PF00004; AAA; 1.
Pfam; PF01434; Peptidase_M41; 1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (EC 1.1.1.3)].
THRA OR THRA1 OR THRA2 OR B0002.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  755 KKMIAPQRWIDAQREKQD 772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 KKVIAPRRLPDPQILKSD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ¥.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATP-binding; Mitochondrion;
                                                                                                                                                                                                                                                                                         AAD28099.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      165
269
356
574
575
578
12
88135 M
                                                                                                                                                                                                                                            AAD28099.1
                                                             EMBL; Y16610; CAA76314.1;
                                                                                                                                                                                                                                                                                                                                  HGNC:11237; SPG7.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                578
12
795 AA;
                                                                                                                                                                                                                                                                                                          P32168; 1E94.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                AF0805241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Escherichia colf
                                                                                                                                                                                                                                                                                                                         MEROPS; M41.006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=562;
                                                                                                                                                                                                                                                                                                                                                      602783; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Escherichia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AK1H_ECOLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TRANSMEM
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACT_SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NP_BIND
METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CONFLICT
                                                                                                                                                                                                                                                                                                                                          Genew;
                                                                           EMBL;
                                                                                                                         EMBL;
                                                                                                                                       EMBL;
                                                                                                                                                                                                                                                                                           EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AK1H_ECOLI
                                                                                                         EMBL;
                                                                                                                                                                                   EMBL;
                                                                                                                                                                                                   EMBL;
                                                                                                                                                                                                                 EMBL;
                                                                                                                                                                                                                                EMBL;
                                                                                                                                                                                                                                             EMBL;
                                                                                                                                                                                                                                                              EMBL;
                                                                                                                                                                                                                                                                             EMBL;
                                                                                                                                                                                                                                                                                                          HSSP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Zinc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
```

```
between the SWISS Institute of Bioinformatics and the EMBL outstation—the European Bioinformatics Institute. There are no restrictions on its most by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This SWISS-PROT entry is copyright. It is produced through a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ENZYME REGULATION: THE ENZYME ACTIVITIES ARE REGULATED ALLOSTERICALLY BY L-THREONINE.
PATHWAY: CATALYZES 2 NONCONSECUTIVE REACTIONS IN THE COMMON BIOSTYTHETIC PATHWAY LEADING FROM ASP TO DIAMINOPIMELATE AND LYS, TO MEY, AND TO THR AND ILE.
SUBGNIT: HOMOTETRAMER.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MISCELLANEOUS: ASPARTOKINASE II-HOMOSERINE DEHYDROGENASE II AND ASPARTOKINASE III ALSO CATALYZE THE SAME REACTION(S). SIMILARITY: IN THE N-TERMINAL SECTION; BELONGS TO THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CB
                                                                   Toura T., Mori H., Nagai H., Nagata T., Ishihama A., Fujita N., Isono K., Mizobuchi K., Nakata A.; Systematic sequencing of the Escherichia coli genome: analysis of the n-2 d min region.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Unpublished results, cited by:
Sakin M.W., Duchange N., Ferrara P., Cohen G.N.;
J. Biol. Chem. 258:3028-3031(1983).
-i- CATALYTIC ACTIVITY: L-homoserine + NAD(P)(+) - L-aspartate 4-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE-80043179; PubMed-387092;
Sibilli L., le Bras G., Cossart P., Chalvignac M.A., le Bras G.,
Billey P.A., Cohen G.N.;
Briley Primary structure of Escherichia coli K 12 aspartokinase I-homoserine dehydrogenase I: sequence of cyanogen bromide peptide
                                                                                                                                                                                                                                                         Blattner F.R.; "Analysis of the Escherichia coll genome VI: DNA sequence of the region from 92.8 through 100 minutes."; Nucleic Acids Res. 23:2105-2119(1995).
                                                                                                                                                                                                                                                                                                                                                                 MEDLINE-80077291; PubMed-390305;
Cossart P., Katinka M., Yaniv M.;
"Construction and expression of a hybrid plasmid containing the
Escherichia coli thrA and thrB genes.";
Mol. Gen. Genet. 175:39-44(1979).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               semialdehyde + NAD(P)H.
-i- CATALYTIC ACTIVITY: ATP + L-aspartate = ADP + 4-phospho-L-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ASPARTOKINASE FAMILY.
SIMILARITY: IN THE C-TERMINAL SECTION; BELONGS TO THE
HOMOSERINE DEHYDROGENASE FAMILY.
                                                                                                                                                                              SEQUENCE FROM N.A.
STRAIN-KI2 / MG1655;
MEDLINE-95334362; PubMed-7610040;
Burland V.D., Plunkett G. III, Sofia H.J., Daniels D.L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              or send an email to license@isb-sib.ch).
                                                                                                                          the 0-2.4 min region.";
Nucleic Acids Res. 20:3305-3308(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; V00361; CAA23660.1; ALT_SEQ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REVISION TO 11.
MEDLINE-83135751; PubMed-6298218;
                                                 MEDLINE-92334977; Pubmed-1630901;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               lochimie 61:733-739(1979).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAA83914.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE OF 51-129.
                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       aspartate.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Cossart P
```

V00360; CAA23659.1;

EMBL; EMBL;

BAA01286.1

014003; D10483;

```
SWISS-PROT entry is copyright. It is produced through a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sits.content is in no way
Usage by and for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on it use by non-profit institutions as long as its content is in no was modified and this statement is not removed. Usage by and for commercia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  acquired immunodeficiency syndrome.";
Virology 157:317-329(1987).
-!- CATALYTIC ACTIVITY: N deoxynucleoside triphosphate = N diphosphate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -i - PTM: SPECIFIC ENZYMATIC CLEAVAGES IN VIVO YIELD MATURE PROTEINS
                                                                                                                                                                                                                               Oxidoreductase; Threonine biosynthesis; NADP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Luciw P.A.;
"Sequence relationships of type D retroviruses which cause simian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-OCT-1996 (Rel. 34, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
POL polyprotein [Contains: Reverse transcriptase (EC 2.7.7.49);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
MEDLINE-87151131; PubMed-2435057;
Thayer R.M., Power M.D., Bryant M.L., Gardner M.B., Barr P.J.,
                                                                                                                                                                                                                                               enzyme; Multifunctional enzyme; Complete proteome.
                                                                                           煌.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 1; Length 820;
                                                                                                                                                                                                                                                                                     HOMOSÉRINE DEHYDROGENASE I.
                                                                                                                                                                                                                                                                                                                                                                                                                                             E4DE917A5703F6E7 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                 T (IN REF. 3).
T (IN REF. 3).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ï
                                                                                                                                                                                                                                                                                                               N -> 0 (IN REF. 5).
L -> 0 (IN REF. 3).
L -> 1 (IN REF. 3).
L -> M (IN REF. 3).
N -> D (IN REF. 3).
N -> D (IN REF. 3).
                                                                                                                                                                                                                                                                                                                                                                                                      (IN REF.
                                                                                                                                                                                                                                                                                                     NADP (POTENTIAL)
Q -> E (IN REF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             867 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 42; DB
Pred. No. 44;
                                                                                                                                                                                                                                                                                                                                                                                                                   NI) I <-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Viruses; Retroid viruses; Retroviridae.
                                                                                                                                                                                                                                                                           INTERFACE
                                                                                                                                                                                        TIGRFAMS; TIGRO0657; asp_kinases; 1.
PROSITE; PS00324; ASPARTOKINASE; 1.
PROSITE; PS01042; HOMOSER_DHGENASE; 1.
                                                                                           IPR001341; Aspartate_kinase.
                                                                                                                                                                                                                                                                                                                                                                                                      DY -> IT
                                                                                                            interPro; IPR005106; NAD_binding_3.
Pfam; PF00696; aakinase; 1.
Pfam; PF00742; Homosering at
                                                                                                         IPR001342; Homoserine_dh
                                                                                                                                                                           NAD_binding_3; 1
                                               EcoGene; EG10998; thrA.
InterPro; IPR002912; ACT.
InterPro; IPR001048; Aa_kinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-OCT-1996 (Rel. 34, Created)
01-OCT-1996 (Rel. 34, Last sequ
15-JUN-2002 (Rel. 41, Last anno
                                                                                                                                                                                                                                                                                                                                                                                                                                             89122 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       43.8%;
ilarity 58.3%;
Conservative
          EMBL; M10644; AAA24671.1;
PIR; A00671; DEECK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11::11 ::111
237 PROVPDARLLKS 248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6 PRRLPDPQILKS 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Simian retrovirus SRV-2.
                                                                                                                                                                                                                                   Kinase;
                                                                                                                                                                                                                                                                                                                                                                                                                               658
820 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity
nes 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=39068;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Endonuclease].
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (DNA)(N)
                                                                                                                                                                 Pfam; PF01842
                                                                                                                                                                           Pfam; PF03447
                                                                                                                                                                                                                                   ransferase;
                                       $40531
                                                                                                                                                                                                                                                Allosteric
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             POL_SRV2
P51517;
                                                                                              InterPro;
                                                                                                         interPro;
                                                                                                                                                                                                                                                                                                                                                                                                                   CONFLICT
CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                      CONFLICT
                                                                                                                                                                                                                                                                                                                                                             CONFLICT
                                                                                                                                                                                                                                                                                                                                                                            CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                         CONFLICT
                                                                                                                                                                                                                                                                                                                                               CONFLICT
                                                                                                                                                                                                                                                                                                      NP BIND
                                                                                                                                                                                                                                                                                          DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  POL_SRV2
셤
```

```
A POST-TRANSLATIONAL EXCISION OF THE INTERVENING REGION (INTEIN)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Endonuclease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AMA-1 OR PF83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-OCT-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AMA1_PLAF8
P50492;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NP_BIND
CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 12
ANAL_PLAR8
AC P50492
AC P50492
DT 01-0CT
DT 01-0CT
DE Apical
CN ANA-1
OC ENEACY
OC ENE
                SOTT THE THE WAY WE BE DEADLY BE AND THE STREET OF THE SOURCE COURSE OF THE SOURCE OF 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
     entities requires a license agreement (See http://www.isb-sib.ch/announce/
or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Davier 3. Seepen R., State B. S., Barrell B., Garnier T., Churcher C., Harris D., Gordon S.V., Elglmeier K., Gas S., Barry C.E. III, Texia F., Badcock K., Basham D., Brown D., Chillingworth T., Connor R., Davies R., Devlin K., Feltwell T., Gentles S., Hamlin N., Holroyd S., Hornsby T., Jagels K., Krogh A., McLean J., Moule S., Murphy L., Oliver S., Osborne J., Quail M.A., Rajandream M.A., Rogers J., Rutter S., Seeger K., Skelton S., Squares S., Squares R., "Deciphering the biology of Mycobacterium tuberculosis from the complete genome sequence.";

Nature 393:537-544(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SERDIN-CDC 1551 / Oshkosh;
STRAIN-CDC 1551 / Oshkosh;
Fleischmann R.D., Alland D., Eisen J.A., Carpenter L., White O.,
Peterson J. DeBoy R., Dodson R., Gwinn M.L., Haft D., Hickey E.,
Kolonay J.F., Nelson W.C., Umayam L.A., Ermolaeva M.D., Salzberg S.L.,
Delcher A., Utterback T., Weidman J., Khouri H., Gill J., Mikula A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Submitted (APR-2001) to the EMBL/GenBank/DDBJ databases.
-!- FUNCTION: PARTICIPATES IN INITIATION AND ELONGATION DURING
CHROMOSOME REPLICATION; IT EXHIBITS DNA-DEPENDENT ATPASE ACTIVITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FUNCTION: THE INTEIN IS AN ENDONUCLEASE (POTENTIAL).
PTM: THIS PROTEIN UNDERGOES A PROTEIN SELF SPLICING THAT INVOLVES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Whole genome comparison of Mycobacterium tuberculosis clinical and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bacteria; Actinobacteria; Actinobacteria (class); Actinobacteridae;
Actinomycetales; Corynebacterineae; Mycobacteriaceae; Mycobacterium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  15-DEC-1998 (Rel. 37, Last sequence update)
16-CCT-2001 (Rel. 40, Last annotation update)
Replicative DNA Helicase (EC 3.6.1..) (Contains: Endonuclease PI-MtuHIP (EC 3.1...) (KHU dnaB intein).
MANDA OR WYOOSB OR WICOSA OR WICO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pfam; PF00665; rve; 1.
Pfam; PF02022; Integrase_Zn; 1.
Transferase; RNA-directed DNA polymerase; Hydrolase; Nuclease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 42; DB 1; Length 867;
Pred. No. 47;
3; Mismatches 5; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    98038 MW; F64227F7365F3659 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      874 AA.
                                                                                                                                                                                                                                                                                                                        InterPro; IPR003308; Integrase_Zn.
InterPro; IPR002156; RNaseH.
InterPro; IPR000477; RVTse.
InterPro; IPR001584; RVe.
                                                                                                                                                                                                                                                                  InterPro; IPR001037; Integrase_C.
InterPro; IPR003308; Integrase_Zr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-NOV-1997 (Rel. 35, Created)
15-DEC-1998 (Rel. 37, Last sequ
                                                                                                                                                                 EMBL; M16605; AAA47562.1; -. .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     43.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3 VIAPRRLPDPQILKSD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        14 ILAPQRYADPITWKSD 29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pfam; PF00552; integrase; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mycobacterium tuberculosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Endonuclease; Polyprotein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pfam; PF00075; rnaseH; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best_Local Similarity 50.0
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pfam; PF00078; rvt; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (BY SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         867 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=1773;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DNAB_MYCTU
P71715;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DNAB_MYCTU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
```

```
between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (see http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                         This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Thomas A.W., Waters A.P., Carr D.; "Analysis of variation in PF83, an erythrocytic merozoite vaccine candidate antigen of Plasmodium falciparum.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ENDONUCLEASE PI-MTUHIP.
REPLICATIVE DNA HELICASE, 2ND PART.
ATP (POTENTIAL).
R -> G (IN REF. 2).
R 94155A86DCB9D70 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Complete proteome. REPLICATIVE DNA HELICASE, 1ST PART
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TICREAMS; TIGRO0665; DnaB; 1.
PROSITE; PS50818; INTEIN_C_TER; 1.
PROSITE; PS50819; INTEIN_ENDONUCLEASE; 1.
PROSITE; PS50817; INTEIN_N_TER; 1.
DNA replication; DNA-binding; APP-binding; Hydrolase; Hellcase;
Primosome; Protein splicing; Autocatalytic cleavage; Nuclease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Apical membrane antigen 1 precursor (Merozoite surface antigen)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
FOLLOWED BY PEPTIDE LIGATION.
SINILARITY: BELONGS TO THE HELICASE FAMILY. DNAB SUBFAMIL SIMILARITY: IN THE INTEIN SECTION; BELONGS TO THE HOMING ENDONUCLEASE FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Plasmodium falciparum (isolate 7G8).
Eukaryota; Alveolata; Apicomplexa; Haemosporida; Plasmodium.
NCBL_TaxID=57266;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ERYTHROCYTES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 874;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Biochem. Parasitol. 42:285-287(1990).
FUNCTION: INVOLVED IN PARASITE INVASION OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-OCT-1996 (Rel. 34, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4; Mismatches .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        622 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pred. No. 47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         InterPro; IPR003587; Hedgehog_hintN.
InterPro; IPR002203; Intein.
InterPro; IPR004042; Intein_endonuc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ProDom; PD000229; RecA; 1.
ProDom; PD0002663; DnaB_helicase; 1.
SMART; SM00305; HintC; 1.
SMART; SM00306; HintN; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       rubercuList; Rv0058; -.
InterPro; IPR001198; DnaB_helicase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE-91101665; PubMed-2270110;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (Rel. 34, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 96916 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        43.8%; 54.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                              ZMBL; AE006918; AAK44286.1;
                                                                                                                                                                                                                                                                                                                                                                                                      EMBL: 280775; CAB02519.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity 54...
6; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            :: ||||:|:|
491 RIAAPRRVPEP 501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             HSSP; P03005; 1JWE.
REBASE; 4230; PI-MtuHIP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2 KVIAPRRLPDP 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pfam; PF00772; DnaB; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
```

```
Kalaria; Signa]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AMA-1 OR PF83
                                                                                                                                                                                                                                                                                                                                                                                                                                                         AMA1_PLAFH
                                                                                                                                                                                                                                                                                CONFLICT
                                                                                                           DOMAIN
                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                             ARBOHYD.
                                                                                                                                                         'ARBOHYD
                                                                                                                                                                       PARBOHYD
                                                                                                                                                                                 ARBOHYD
                                                                                                                                                                                               ARBOHYD
                                                                                                                                                                                                         CARBOHYD
                                                                                                                                                                                                                      CONFLICT
                                                                                                                                                                                                                                                                    CONFLICT
                                                                                                                                                                                                                                CONFLICT
                                                                                                                                                                                                                                             CONFLICT
                                                                                                                                   DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 14
AMA1_PLAFH
                                                                                                  CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    õ
                                                                                                                                                                                                                                                                                                                                                                                           q
 This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@ib-sib.ch).
                                            This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bloinformatics and the EMBL outstation the European Bloinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (see http://www.isb-sib.ch/announce/or send an email to license@lsb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                              5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SUBCELLULAR LOCATION: Type I membrane protein.
SIMILARITY: STRONG TO AMA-1 FROM P.CHABAUDI AND P.FRAGILE, AND TO PR66 FROM P.KNOWLESI.
SUBCELLULAR LOCATION: Type I membrane protein.
SIMILARITY: STRONG TO AMA-1 FROM P.CHABAUDI AND P.FRAGILE, AND TO
PR66 FROM P.KNOWLESI.
                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDINE-89384584; PubMed-2701947;

Meterson M.G., Marshall V.M., Smythe J.A., Crewther P.E., Lew A., Silva A., Anders R.F., Kemp D.J.;

"Integral membrane protein located in the apical complex of Plasmodium falciparum.";

Mol. Cell. Biol. 9:3151-3154(1989).

"INVOLVED IN PARASITE INVASION OF ERYTHROCYTES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-AUG-1991 (Rel. 19, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Apical membrane antigen 1 precursor (Merozoite surface antigen).
                                                                                                                                                                                                                                                                    N-LINKED (GLCNAC. . .) (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                  (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                              11;
                                                                                                                                                                                                                                                                                                                                                                      DB 1; Length 622;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Alveolata; Apicomplexa; Haemosporida; Plasmodium
NCBI_TaxID=5837;
                                                                                                                                                                                                                                                                                                                                                                                              3; Indels
                                                                                                                                   EMBL; MS8548; AAA29721.1; ...
InterPro; IRO03298; Apmem_Ag1.
Fram; PF02430; AMA-1; 1.
PRINTS; PR01361; MEROZOTTESA.
Malaria; Signal; Transmembrane; Antigen; Glycoprotein.
24 POTENTAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Plasmodium falciparum (isolate FC27 / Papua New Guinea)
                                                                                                                                                                                                                    APICAL MEMBRANE ANTIGEN 1. EXTRACELLULAR (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                            1C9C8715D8E2915F CRC64;
                                                                                                                                                                                                                                                        CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        622 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                   5; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                     1 KKVIAPR-----RLP-DPQILKSDT 19
                                                                                                                                                                                                                                                                                                                                                                                   Pred. No. 39;
                                                                                                                                                                                                                                                                                                                                                                      Score 41.5;
                                                                                                                                                                                                                                                                                                                                  N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-AUG-1991 (Rel. 19, Created)
01-AUG-1991 (Rel. 19, Last seq
                                                                                                                                                                                                                                                                                                                                              71990 MW;
                                                                                                                                                                                                                                                                                                                                                                      43.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                              11; Conservative
                                                                                                                                                                                                                                                                                                                                            622 AA;
                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AMA-1 OR PF83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AMA1_PLAFF
P22621;
                                                                                                                                                                                                                                DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                         DOMAIN
CARBOHYD
                                                                                                                                                                                                                                                                                              CARBOHYD:
                                                                                                                                                                                                                                                                                  CARBOHYD
                                                                                                                                                                                                                                                                                                                       CARBOHYD
                                                                                                                                                                                                                                                                                                                                  CARBOHYD
                                                                                                                                                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                   Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 13
AMA1_PLAFF
                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
```

EMBL; M27133; AAA29475.1; -

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (see http://www.isb-sib.ch/announce/or send an email to licenseefisb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTENTTAL).

(POTENTIAL).

(POTENTIAL).

CLCNAC...) (POTENTIAL).

CLCNAC...) (POTENTIAL).

© (IN REF. 1; AAA29476).

(IN REF. 1; AAA29476).

TN REF. 1; AAA29476.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-OCT-1996 (Rel. 34, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Apical membrane antigen 1 precursor (Merozoite surface antigen).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 1; Length 622;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Plasmodium falciparum (isolate thtn / Thailand).
Eukaryota; Alveolata; Apicomplexa; Haemosporida; Plasmodium.
NCBL_TaxID=70151;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        : AAA29476)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                      APICAL MEMBRANE ANTIGEN 1.
                                                                                                                                                                                                                                                                                                                                                   EXTRACELLULAR (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRINTS; PR01361; MERCZOITESA.
Malaria; Signal; Transmembrane; Antigen; Glycoprotein.
SIGNAL 1 24 POTENTIAL.
                                                                                                                                                                                                                          Antigen; Glycoprotein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                N-LINKED (GLCNAC...) (IN-LINKED (GLCNAC...) (
                                                                                                                                                                                                                                                                                                                                                                                   POTENTIAL. CYTOPLASMIC (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0 -> E (IN REF. 1; A)

1 -> N (IN REF. 1; A)

0 -> H (IN REF. 1; A)

H -> N (IN REF. 1; A)

I -> M (IN REF. 1; A)

N -> R (IN REF. 1; A)

1 -> N (IN REF. 1; A)

1 -> N (IN REF. 1; A)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pred. No. 39;
5; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 KKVIAPR-----RLP-DPQILKSDT 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 41.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; M58547; AAA29720.1; -.
InterPro; IPR003298; Apmem_Ag1.
Pfam; PF02430; AMA-1; 1.
                                                                                                                                                                                                                                      ; Transmembrane;
                                                                                                                 interPro; IPR003298; Apmem_Ag1.
fam; PF02430; AMA-1; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  P50491;
01-OCT-1996 (Rel. 34, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    72009 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             43.28;
36.78;
                                                                                                                                                                                         PRINTS; PR01361; MEROZOITESA.
EMBL; M27957; AAA29476.1; -. EMBL; A08267; CAA00764.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Local Similarity 36.7
Matches 11; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STANDARD;
                                                                            JR; A32499; A32499.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             421
499
3308
3308
407
439
496
503
622 AA;
```

us-09-824-647-3.rsp

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There is no restrictions on its use by non-profit institutions as long as its content is in no way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Fraser C. M., Casjens S., Huang W.M., Sutton G.G., Clayton R.A.,
Lathigra R., White O., Ketchum K.A., Dodson R., Hickey E.K., Gwinn M.
Dougherty B., Tomb J.-F., Flaschmann R.D., Richardson D.,
Peterson J., Kerlavage A.R., Quackenbush J., Salberg S., Hanson M.,
van Vugt R., Palmer N., Adams M.D., Gocayne J.D., Weidman J.,
Utterback T., Watthey L., McDonald L., Artiach P., Bowman C.,
Smith H.O., Venter J.C.,
Smith H.O., Venter J.C.,
"Genomic sequence of a Lyme disease spirochaete, Borrelia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              in biosynthesis; Ligase; ATP-binding;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -i - CATALYTIC ACTIVITY: ATP + L-glutamate + tRNA(Glu) = AMP + dlphosphate + L-glutamyl-tRNA(Glu).
-i - SUBUNIT: MONOMER (BY SIMILARITY).
-i - SUBCELLUTAR LOCATION: Cytoplasmic.
-i - SIMILARITY: BELONGS TO CLASS-I AMINOACYL-TRNA SYNTHETASE FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                               30-MAY-2000 (Rel. 39, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Glutamyl-tRNA synthetase (EC 6.1.1.17) (Glutamate--tRNA ligase)
                                                                                                                                                                                                                3; Indels 11;
                                                                                                                (POTENTIAL
                                                                                                                                                                               DB 1; Length 622;
                  EXTRACELLULAR (POTENTIAL)
APICAL MEMBRANE ANTIGEN 1
                                                                                                                                               1FDFA53593C94CC5 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               (GluRS).
GLTX OR BB0372.
Borrelia burgdorferi (Lyme disease spirochete).
Bacteria; Spirochaetales; Spirochaetaceae; Borrelia.
NCBI_TaxID-139;
                                                             N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
                                                                                                                                                                              Score 41.5; DE
Pred. No. 39;
5; Mismatches
                                                                                                                                                                                                                                                                                                                                                                 490 AA.
                                                                                                                                                                                                                                                                 1 KKVIAPR-----RLP-DPQILKSDT 19
                                OTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRAIN-ATCC 35210 / B31;
MEDLINE-98065943; PubMed-9403685;
                                                                                                                                                                                                                                                                                                                                                                                            30-MAY-2000 (Rel. 39, Created)
30-MAY-2000 (Rel. 39, Last seq
16-OCT-2001 (Rel. 40, Last anno
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            nterPro; IPR004527; Gltx_bact
                                                                                                                                                 71989 MW;
                                                                                                                                                                   Query Match
Best Local Similarity 36.7%;
Watches 11; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; AE001142; AAC66742.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Aminoacyl-tRNA synthetase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Nature 390:580-586(1997)
                                                                                                                                                                                                                                                                                                                                                               STANDARD;
                                                                                                                                                 622 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        fam; PF00749;
                                                                                                                                                                                                                                                                                                                                           SYE_BORBU
ID SYE_BORBU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             IGRFAMS;
                              TRANSMEM
DOMAIN
CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                             CARBOHYD
CARBOHYD
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             nterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PROSITE
                                                                                                                                                                                                                                                                                                                                                                              051345;
               DOMAIN
                                                                                                                                                                                                                                                                                                                               RESULT
80
                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                ð
```

```
Length 490;
                                                                         Indels
       "HIGH" REGION.
"KMSKS" REGION.
ATP (BY SIMILARITY).
E7ED6AD2474934F4 CRC64;
                                                       DB 1;
36;
                                                                Pred. No. 36;
0; Mismatches
                                                       Score 41;
                                                                                                                                        completed: July 8, 2003, 16:24:59
ne : 11.2564 secs
        19 "F
255 "F
254 A7
56751 MW;
                                                      42.7%;
88.9%;
                                                                Best_Local Similarity 88.9
Matches 8; Conservative
                                                                                                     10 PDPQILKSD 18
                                     490 AA;
Complete proteome.
SITE 9
                                                      Query Match
                                     SEQUENCE
                  SITE
BINDING
                                                                                                                                         Search co
 WE FE S
                                                                                            ð
                                                                                                              g
```

GenCore version 5.1.6 Copyright (c) 1993 - 2003 Compugen Ltd:

OM protein - protein search, using sw model

Run on:

July 8, 2003, 16:17:10 ; Search time 40.9231 Seconds (without alignments) 95.665 Million cell updates/sec

US-09-824-647-3 96 Title: Perfect score:

1 KKVIAPRRLPDPQILKSDT 19 Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

671580 seqs, 206047115 residues Searched:

671580 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 su

sp\_archea:\* sp\_bacteria:\* SPTREMBL\_21:\* sp\_fund1: Database :

sp\_unclassified: invertebrate: sp\_bacter1ap:\* sp\_vertebrate: organelle: sp\_archeap:\* p\_rodent: sp\_mammal:\* sp\_plant:\* p\_virus:\* sp\_human:\* sp\_phage:\* sp\_mhc:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

		Description	Q9d2v3 mus musculu	O86149 campylobact	Q9png3 campylobact	Q9k5d5 campylobact	Q9n4k2 caenorhabdi	' Q8qvc6 colorado ti	Q9enk9 colorado ti	Q9h8s1 homo sapien	Q13648 homo sapien	. Q9hbt9 homo sapien	Q8tnc8 methanosarc	064621 arabidopsis	Q99p28 mus musculu	Q40159 lycopersico	080056 staphylococ	Q9f0g6 pseudomonas
SUMMARIES		e	Q9D2V3	086149	Q9PNG3	Q9K5D5	Q9N4K2	Q8QVC6	Q9ENK9	Q9H8S1	013648	.09нвт9	Q8TNC8	064621	Q99P28	040159	080056	Q9F0G6
		g ;	11	~	16	7	s	12	12	4	4	4	17	10	11	10	6	7
	,	Match Length DB	589	328	328	330	755	482	684	413	463	466	1300	131	164	174	223	255
	Query	Match	92.7	50.0	50.0	50.0	46.9	46.4	46.4	45.8	45.8	45.8	45.8	44.8	44.8	44.8	44.8	44.8
		Score	88	48	48	48	45	44.5	44.5	44	44	44	44	43	43	43	43	43
	Result	S	-	7	e	₹	'n	9		<b>œ</b>	đ	10	11	12	13	14	15	16

. ശ എ	United trypanosoma (2944n) drosoma (2944n) drosoma (2944n) drosoma (2947n) drosoma (2947n) drosoma (26416 trypanosoma (26414 tr
<i>\$</i> .	
	e e e
09D1F2 09A244 09HIR3 099WD0 08SOW0 08SSW0 08F2E3 09FR2E3 09FR2E3 09FR2E3 09FR2E3 09FR2E3 09FR2E3 09FR2E3 09FR2E3 09FR2E3 09FR2E3	Q9N814 Q9V4N9 Q8RNN12 Q8Z819 Q8Z819 Q8Z819 Q8XA84 Q9WQ04 Q9WQ00 Q26816 Q8WPT4
111 110 110 110 110 110 110 110	5 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
271 8596 8592 1789 1789 1789 305 862 862 862 862 862 862 862 862 862 862	644- 644- 780 820 820 820 820 867 867 1650
	**************************************
444444444444444444444444444444444444444	
	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~

ALIGNMENTS

Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sclurognathi; Muridae; Musinae; Mus NCBL\_TaxID=10090; 01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
Adult male kidney CDNA, RIKEN full-length enriched library, 589 AA. 17, Created) PRT; STRAIN-C57BL/6J; TISSUE-KIDNEY; MEDLINE-21085660; PubMed-11217851; PRELIMINARY; (TrEMBLrel. musculus (Mouse). [1] SEQUENCE FROM N.A. 01-JUN-2001 ( 01-JUN-2001 ( 01-JUN-2002 ( 09D2V3 **09**D2V3 RESULT 1

Rawai J., Shinagawa A., Shibata K., Yoshino M., Itoh M., Ishii Y.,
Arakawa T., Hara A., Shibata K., Yoshino M., Itoh M., Ishii Y.,
Arakawa T., Hara A., Pukunishi Y., Konno H., Adachi J., Fukuda S.,
Alzawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,
Saito T., Okazaki Y., Golobori T., Bono H., Kasukawa T., Saito R.,
Radota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,
Radota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,
Radota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,
Radota K., Matsuda H.P., Suzuki R., Tomita M., Wagner L., Washio T.,
Schriml L.M., Staubli F., Suzuki R., Tomita M., Wagner L., Washio T.,
Sakai K., Okido T., Furuno M., Carninci P., de Bonaldo M.F.,
Blake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F.,
Ruonstein M.J., Bult C., Fletcher C., Fujita M., Gariboldi M.,
Ryons P., Marchionni L., Mashima J., Mazzarelli J., Mombaerts P.,
Nordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N.,
Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,
Nymshaw-Bootis A., Yoshida K., Hasegawa Y., Kawaji H., Kohtsuki S.,
Mynshaw-Bootis A., Yoshida K., Hasegawa Y., Kawaji H., Rohtsuki S., 

annotation of a full-length mouse cDNA collection."; Nature 409:685-690(2001). EMBL; AK018744; BAB31384.1; -. Hayashizaki Y.;

ö

086149

셤

ö

GALE.

RESULT 2 086149 
0086149 
DO 01-NO 00611 
DO 01-NO 01-NO

Length 328;

```
Fry B.N., Korolik V., van der Zeijst B.A., Coloe P.J.; *A gene cluster from Campylobacter jejuni involved in inner core and
Parkhill J., Wren B.W., Mungall K., Ketley J.M., Churcher C., Basham D., Chillingworth T., Davies R.M., Feltwell T., Holroyd S., Jagels K., Karlyshev A.V., Moule S., Pallen M.J., Penn C.W., Gouail M.A., Rajandream M.A., Rutherford K.W., van Vliet A.H.M., Whitehead S., Barrell B.G., Whitehead S., Barrell B.G., The genome sequence of the food-borne pathogen Campylobacter Jejuni
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida; Rhabditoldea;
Rhabditidae; Peloderinae; Caenorhabditis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Campylobacter jejuni.
Bacteria; Proteobacteria; epsilon subdivision; Campylobacter group;
Campylobacter.
NCBL_TaxID-197;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Submitted (DEC-1998) to the EMBL/GenBank/DDBJ databases EMBL; AJ131360; CAC01389.1; -. HSSP; PO9147; 1XEL. InterPro: IPPO15109; Epimerase_Dh. Pfam; PF01370; Epimerase; 1. TIGRFAMS; TIGR01179; galE; 1. SEQUENCE 330 AA; 37053 MW; 143E592891246F9E CRC64;
                                                                                                                                                                                                                                                                                              328 AA; 36734 MW; 7372DDC08F8F5676 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-OCT-2000 (TTEMBLrel. 15, Last sequence update) 01-JUN-2002 (TTEMBLrel. 21, Last annotation update) Hypothetical 81.7 kDa protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                          Score 48; DB 16;
Pred. No. 7.5;
2; Mismatches 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 50.0%; Score 48; DB 2; Best Local Similarity 55.6%; Pred. No. 7.5; Matches 10; Conservative 2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  330 A.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        755 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-OCT-2000 (TrEMBLrel. 15, Created)
                                                                                                                            reveals hypervariable sequences.";
Nature 403:65-668(2000).
EMBE; AL139077; CAB73386.1; -.
HSSP; P09147; IRVS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                            nterPro; IRR001509; Epimerase_Dh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pfam; PF01370; Epimerase; 1.
TIGRFAMS; TIGR01179; galE; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                              | :||{| || :| ||
280 KVELAPRRAGDPSVLISD 297
                                                                                                                                                                                                                                                                                                                                                                                                                      1 KKVIAPRRLPDPQILKSD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 KKVIAPRRLPDPQILKSD 18
                                                                                                                                                                                                                                                                                                                                     55.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-OCT-2000 (TrEMBLrel. 15, 01-OCT-2000 (TrEMBLrel. 15, 01-JUN-2002 (TrEMBLrel. 21,
                                                                                                                                                                                                                                                                                                                                                          Best_Local Similarity 55.6
Matches 10; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          UDP-glucose 4-epimease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Caenorhabditis elegans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A synthesis.";
                                                                                                                                                                                                                                                                             Complete proteome.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A. STRAIN-81116;
                                                                                                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 F54A3.4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        09N4K2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 09K5D5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     09N4K2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bacteria; Proteobacteria; epsilon subdivision; Campylobacter group; Campylobacter.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Campylobacter jejuni.
Bacteria; Proteobacteria; epsilon subdivision; Campylobacter group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Fry B.N., Korolik V., ten Brinke J.A., Pennings M.T.T., Zalm R., Teunis B.J.J., Coloe P.J., van der Zeijst B.A.M.;
"The lipopolysaccharide biosynthesis locus of Campylobacter jejuni
                                                                                                                                                                                                                                    ö
                                                                                                                                                                                           Length 589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 48; DB 2; Length 328;
Pred. No. 7.5;
2; Mismatches 6; Indels
                                                                                                                                                                                       92.7%; Score 89; DB 11; Length 58 94.7%; Pred. No. 2.2e-06; Ive 0; Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            InterPro; IPR001509; Epimerase_Dh.
Pfam; PF01370; Epimerase; 1.
TIGRPAMs; TIGR01179; galE; 1.
SEQUENCE 328 Aa; 36791 MW; FA49B77EC02793AA CRC64;
                                                                                                     PROSITE; PS00799; GRANULINS; 7.
PROSITE; PS00118; PA2_HIS; UNKNOWN_1.
SEQUENCE 589 AA; 63405 MW; 1DE8229C413CA292 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-JUN-2002 (TrEMBLrel. 15, Last Sequence update) UDP-glucose 4-epimerase (EC 5.1.3.2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                      328 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   328 AA
                 InterPro; IPR000118; Granulin.
InterPro; IPR001211; PhospholipaseA2
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Created)
                                                                                                                                                                                                                                                                                                                                                                                                                      PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
STRAIN-NCTC 11168;
MEDLINE-20150912; PubMed-10688204;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE-98386495; PubMed-9720026;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            81116.";
Marchbiology 144:2049-2061(1998).
EMBL; Y11648; CAA72350.1;
HSSP; P09147; IXEL.
                                                                                                                                                                                                                                                                                                1 KKVIAPRRLPDPQILKSDT 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | :|||| || :| ||
280 KVELAPRRAGDPSVLISD 297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 KKVIAPRRLPDPQILKSD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 55.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-NOV-1998 (TrEMBLrel. 08, 01-NOV-1998 (TrEMBLrel. 08, 01-JUN-2002 (TrEMBLrel. 21,
                                                              Pfam; PF00396; granulin; 7. SMART; SM00277; GRAN; 7.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (TrEMBLrel. 15, (TrEMBLrel. 15,
                                                                                                                                                                              Query Match
Best Local Similarity 94.79
Watches 18; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                    PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local Similarity 55.6
Matches 10; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-NOV-1998 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Campylobacter jejuni.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=197;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Campylobacter.
NCBI_TaxID=197;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GalE protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRAIN-81116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
```

ö

ö

O9PNG3

RESULT Q9PNG3

å

Length 330; Indels Created)
Last sequence update)
Last annotation update)

684 AA.

PRT;

```
MEDLINE=20351236; PubMed=10891382; Attout H., Billoir F., Biagini P., Cantaloube J.F., de Chesse R., Attout H., Billoir F., Biagini P., Cantaloube J.F., de Chesse R., De Micco P., de Lamballerle X.; Squence Determination and Analysis of the Full-Length Genome of Colorado Tick Fever Virus, the Type Species of Genus Coltivirus Reaviridae)."; Biochem Biophys. Res. Commun. 273:1121-1125(2000).

EMBL; ARI39763; AAGOOJ22.1; -SEQUENCE 684, AA; 76236 MW; BFE2516BB344B4C5 CRC64;
                                                                                                                                                 dsRNA viruses; Reoviridae; Coltivirus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 :|| : ||| ::| |||
511 VAPSQAPDPEELLDSDT 527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4 IAPRRLPDP-QILKSDT 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity 52.9%;
les 9; Conserved
                                        01-MAR-2001 (TrEMBLrel. 16, 01-MAR-2001 (TrEMBLrel. 16, 01-DEC-2001 (TrEMBLrel. 19,
                                                                                                                               Colorado tick fever virus
PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity
nes 10; Conserv
                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                          NCBI_TaxID=46839;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                        Viruses;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q9H8S1
Q9H8S1;
                      29ENK9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SO DE REPARENTE DE LA PROPERTICA DEL PROPERTICA DE LA PROPERTICA DEL PROPERTICA DE LA PROPERTICA DEL PROPERTICA DE LA PROPERTICA DE LA PROPERTICA DEL PROPERTICA DEL PROPERTICA DE LA PROPERTICA DE LA PROPERTICA DE LA PROPERTICA DEL PROP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRAIN—CTFV-S6-14-03;
MEDILINE—21954629; PubMed=11958454;
Attoul H., Mohd J.F., Blagini P., Cantaloube J.F., de M.P.,
Murphy F.A., de L.X.;
"Genus Coltivirus (family Recviridae): genomic and morphologic
characterization of Old World and New World viruses.";
Arch. Virol. 147:533-561(2002).
EMBL: AR343057; AAM18363.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                               "Genome sequence of the nematode C. elegans: a platform for investigating biology. The C. elegans Sequencing Consortium."; Science 282:2012-2018(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 12; 'Length 482;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 45; DB 5; Length 755;
Pred. No. 56;
3; Mismatches 6; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3; Indels
                                                                                                                                                                                                                                                            Goela D., Miller N., Latreille P., Scheet P.;
"The sequence of C. elegans cosmid F54A3.";
Submitted (MAR-2000) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                  "Direct Submission.";
Submitted (AUG-2001) to the EMBL/GenBank/DDBJ databases
EMBL; ACO24136; AAF35961.1; --
HSSP: P35520; 1UBQ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          482 482
482 AA; 53907 MW; 354BA204FADA279F CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           042908A27D844DD5 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VP7 (Fragment).
Colorado tick fever virus.
Viruses; dsRNA viruses; Reoviridae; Coltivirus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                482 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 46.4%; Score 44.5; D
Best Local Similarity 52.9%; Pred. No. 43;
Matches 9; Conservative 4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         InterPro; IPR001926; B6_enzyme_beta.
Pfam; PF00291; PALP; 2.
Hypothetical protein.
SEQUENCE 755 AA; 81678 MW; 04290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
                                                                      STRAIN-BRISTOL N2;
MEDLINE-99069613; PubMed-9851916;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     298 KKPIKPREIFDPKVLDYD 315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    :|| : ||| ::| |||
388 VAPSQAPDPEELLDSDT 404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 KKVIAPRRLPDPOILKSD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4 IAPRRLPDP-QILKSDT 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      46.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-JUN-2002 (TrEMBLrel. 21, 01-JUN-2002 (TrEMBLrel. 21,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             50.08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (TrEMBLrel. 21,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity 50.08
Matches 9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                            STRAIN-BRISTOL N2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=46839;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SECUENCE FROM N.A.
                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                              STRAIN-BRISTOL N2;
                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
    NCBI_TaxID=6239;
                                                                                                                                                                                                                                                                                                                                                                                                     Waterston R.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q8QVC6;
01-JUN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              080VC6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ç
```

Ξ,

Gaps

Indels

Score 44.5; DB 12; Pred. No. 61; 4; Mismatches 3;

Length 684;

```
ö
                                                                                                                                                                                                                                                                                                                                 TISSUB-OVARIAN CARCINOMA;
ISOGAI T., Ota T., Hayashi K., Sugiyama T., Otsuki T., Suzuki Y.,
Nishikawa T., Nagai K., Sato H., Sugano S., Shiratori A., Sudo H.,
Nishikawa T., Nagai K., Sato Y., Kaku Y., Kodaira H., Kondo H., Sugawara M.,
Takahashi M., Chiba Y., Ishida S., Murakawa K., Ono Y., Takiguchi S.,
Watanabe S., Kimura K., Murakami K., Ishii S., Kawai Y., Saito K.,
Yanamoto J., Wakamatsu A., Nakamura Y., Nagahari K., Masuho Y.,
Ninomiya K., Iwayanagi T.;
Ninomiya K., Iwayanagi T.;
Submitted (AUG-2000) to the EMBL/Genbank/DDBJ databases.
EMBL; AK023348; BAB14535.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                          Homo sapiens (Human).
Eukaryota: Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 44; DB 4; Length 413; Pred. No. 44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro; IPR000118; Granulin.
InterPro; IPR001211; PhosphollpaseA2.
Pfam; PF00396; granulin; 4.
SMART; SM00277; GRAN; 4.
PROSITE; PS00799; GRANULINS; UNKNOWN_4.
PROSITE; PS00118; PA2_HIS; UNKNOWN_1.
SEQUENCE 413 AA; 44132 MW; 0B3767A44BB314EC CRC64;
                                                                                 Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1; Mismatches
                                                      Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 KKVIAPRRLPDPQILKSD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       45.8%;
nilarity 55.6%;
Conservative
                                                   01-MAR-2001 (TTEMBLrel. 16, 01-MAR-2001 (TTEMBLrel. 16, 01-JUN-2002 (TTEMBLrel. 21,
PRELIMINARY;
                                                                                                                                              OVARC1001154 protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
```

RESULT Q9ENK9

```
acetivorans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best_Local Similarity 50.0
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
STRAIN-CV. COLUMBIA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID-2214;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID=3702;
                                                                                                                                                                                                                                                                                                                                                                          Methanosarcina
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                    Q8TNC8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        064621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 12
064621
                                                                                                                                  RESULT 11
Q8TNC8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
Blechschmidt K., Schudy A., Kalaydjieva L., Gooding R., Gresham D.,
Baas F., Jonge, Rd, Schilhabel M.B., Menzel U., Baumgart C.,
Bette M.D., Jahn N., Rosenthal A.;
"Chromosome 8 genomic sequence.":
Submitted (JAN-2000) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens (Human).
Eukaryota: Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Butheria; Primates; Catarrhini; Hominidae; Homo.
NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                O'Hern P.A., Yavetz H., Moy T., Yavetz B., Liang 2.G., Wang G.Y.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             45.8%; Score 44; DB 4; Length 466; 44,4%; Pred. No. 50; 1ve 5; Mismatches 5; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 463;
                                                                                                                                                                                                                                                                                                                                                                                                                      Goldberg E.;
Submitted (JUN-1996) to the EMBL/GenBank/DDBJ databases.
EMBL; U60666; AAB02976.1; -.
InterPro; IPR001611; LRR.
InterPro; IPR003603; LRR.cap.
InterPro; IPR003592; LRR.out.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Genome Sequencing Center Jena;
Submitted (NOV-2000) to the EMBL/GenBank/DDBJ databases.
EMBL; AF216667; AAG33017.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4A3DBF849D5621C7 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2D6A11C3A7CFC6C3 CRC64;
                                                                                                                             01-NOV-1996 (TrEMBLrel. 01, Last sequence update) 01-DEC-2001 (TrEMBLrel. 19, Last annotation update) Testis specific leucine rich repeat protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-MAR-2001 (TrEMBLrel. 16, Last sequence update) 01-JUN-2002 (TrEMBLrel. 21, Last annotation update) Testis specific leucine rich repeat protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 44; DB 4;
Pred. No. 49;
                                                         463 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-MAR-2001 (TrEMBLrel. 16, Created)
                                                                                                          Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
                                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Interpro; IPR001611; LRR.
Interpro; IPR003603; LRRcap.
Interpro; IPR003502; LRR_out.
Pfam; PP00560; LRR; 3.
SMART; SM00370; LRR; 3.
SNART; SM00466; LRRcap; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 KKVIAPRRLPDPQILKSD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SMART; SM00370; IRR; 2.
SMART; SM00446; IRRCap; 1.
SEQUENCE 463 AA; 53936 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S4254 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                44.48;
                                                                                                       (TrEMBLrel. 01,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRELIMINARY;
                                                         PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pfam; PF00560; LRR; 3.
                                                                                                                                                                                                                                             Homo sapiens (Human).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local Similarity
Matches 8: Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
Matches 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                       01-NOV-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SMART; SM
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q9HBT9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         09HBT9
                                                   013648
                                                                                                                                                                                                               TSLRP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 10
Q9HBT9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PSLRP
RESULT 9
Q13648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCOUNT BY 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
```

```
Galagan J.E., Nusbeau C., Roy A., Endrizzi M.G., Macdonald P., Fitzhugh W., Calvo S., Engels R., Smirnov S., Atnoor D., Brown A., Allen N., Naylor J., Stange-Thomann N., DeArellano K., Johnson R., Linton L., McEwan P., McKernan K., Talamas J., Tirrell A., Ye W., Zimmer A., Barber R.D., Cann I., Graham D.E., Grahame D.A., Guss A.M., Hedderich R., Ingram-Smith C., Kuettner H.C., Krzycki J.A., Springer T.A., Umayam L.A., White O., White R.H., de Macario E.C., Ferry J.G., Jarrell K.F., Jing H., Macario A.J.L., Paulsen I., Ferry J.G., Jarrell K.F., Jing H., Macario A.J.L., Paulsen I., Metcalf W.W., Birren B.; The, genome of Methanosarcina acetivorans reveals extensive metabolic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Arabidopsis thaliana (Mouse-ear cress).
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae;
eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRAIN-CV. COLUMBIA;
Rounsley S.D., Lin X., Ketchum K.A., Crosby M.L., Brandon R.C.,
Sykes S.M., Kaul S., Mason T.M., Kerlavage A.R., Adams M.D.,
Somerville C.R., Venter J.C.;
Submitted (DEC-1997) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                             3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 1300;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Hypothetical protein; Complete proteome.
SEQUENCE 1300 AA; 148273 MW; 591A14D4B8AA7EA1 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Archaea; Euryarchaeota; Methanococci; Methanosarcinales; Methanosarcina.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                 01-UNN-2002 (TrEMBLrel. 21, Created)
01-UNN-2002 (TrEMBLrel. 21, Last sequence update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
19pothetical protein MA2362.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Expressed protein (Hypothetical 14.3 kDa protein)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  45.8%; Score 44; DB 17; 50.0%; Pred. No. 1.5e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     131 AA.
                                                                                                                                                                                                    1300 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRAIN-C2A / ATCC 35395 / DSM 2834;
MEDLINE-21929760; PubMed-11932238;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-AUG-1998 (TEMBLrel. 07, Created)
01-JUN-2002 (TEMBLrel. 21, Last seq
01-JUN-2002 (TEMBLrel. 21, Last ann
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT;
:| ||| |:|:|: |:
434 EKKHTPRRRPEPKIIPSE 451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             and physiological diversity.";
Genome Res. 12:532-542(2002).
EMBL; AE010925; AAM05750.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          535 EKLVAYSRLPDPEEVK 550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 KKVIAPRRLPDPQILK 16
```

us-09-824-647-3.rspt

```
MEDLINE-9832719; PubMed=9666077;
Raneko J., Kimura T., Narita S., Tomita T., Ramio Y.;
Raneko J., Kimura T., Narita S., Tomita T., Ramio Y.;
Raneko J., Kimura T., Narita S., Tomita T., Ramio Y.;
Raneko J., Kimura T., Narita S., Tomita T., Ramio Y.;
Raneko J., Rimura T., Narita S., Tomita T., Ramio Y.;
Raneko J., Raneko J., Pateria Batteria Bat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "A molecular study of Meloidogyne incognita-induced feeding sites.";
Plant J. 9:45-54(1996).
                                                                                                                                                                                                                   Lycopersicon esculentum (Tomato).

Eukaryota, Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnollophyta; eudicotyledons; core eudicots; Spermatophyta; Asteridae; Solanaceae; Solanum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Kaneko J., Muramoto K., Kamio Y., Ganeko J., Muramoto K., Kamio Y., Gene of Lukr-Pyv-like component of Panton-Valentine leukocidin in Staphylococcus aureus P83 is linked with lukw.", Biosetl. Biotechnol. Biochem. 61:1960-1962(1997).
                                                                                                                                                                                                                                                                                                                                                                                                         STRAIN-MARMANDE: TISSUE-MELOIDOGYNE INCOGNITA-INDUCED ROOT KNOT;
MEDLINE-96158345; PubMed-8580972;
Van der Eycken W., De Almeida Engler J., Inze D., Van Montagu M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Staphylococcus aureus bacteriophage PVL.
Viruses; dsDNA viruses, no RNA stage; Caudovirales; Siphoviridae.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
STRAIN-MARMANDE; TISSUE-MELOIDOGYNE INCOGNITA-INDUCED ROOT KNOT;
Van der Eycken W.V.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 174;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 223;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (AUG-1997) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; Z46654; CAA86613.1; -.
Interpro; IPR004864; LEA_2.
Pfam; PF03168; LEA_2; 1.
SEQUENCE 174 AA; 19123 MW; 1DBB432943707322 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-NOV-1998 (TrEMBLrel. 08, Created)
01-NOV-1998 (TrEMBLrel. 08, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)

    Last sequence update)
    Last annotation update)

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 43; DB 10;
Pred. No. 26;
5; Mismatches 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11arity 57.1%; Score 43; DB 9; Conservative 1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          223 AA
                                                      174 AA
                                                                                                                                                                                           Late embryogenesis (Lea)-like protein.
                                                                                                             (TrEMBLrel. 01, Created)
                                                      PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE-98067870; PubMed-9404084;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .
2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2 KVIAPRRLPDPQILKSD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           :|| |:|| :|:
68 RVIASGRIPDPGSIKAN 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity 47.1%;
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRELIMINARY;
                                                      PRELIMINARY;
                                                                                                           01-NOV-1996 (TrEMBLrel.
01-NOV-1996 (TrEMBLrel.
01-JUN-2002 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Local Similarity
Matches 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=71366;
                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=4081;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-NOV-1998
01-NOV-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gheysen G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          080056;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          080056
                                                      040159
040159;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 15
080056
RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
Southwick A., Karlin-Neumann G., Nguyen M., Lam B., Miranda M.,
Palm C.J., Bowser L., Jones T., Banh J., Carninci P., Chen H.,
Cheuk R., Chung M.K., Hayashizaki Y., Ishida J., Kamiya A., Kawal J.,
Kim C., Lin J., Liu S.X., Narusaka M., Pham P.K., Sakano H.,
Sakurai T., Satou M., Seki M., Shinn P., Yamada K., Shinozaki K.,
                                                                                                                                                                                                                                                Nguyen M., Karlin-Neumann G., Southwick A., Lam B., Miranda M., Palm C.J., Bowser L., Jones T., Banh J., Carninci P., Chen H., Cheuk R., Chung M.K., Hayashizaki Y., Ishida J., Kamiya A., Kawai J., Kim C., Lin J., Liu S.X., Narusaka M., Pham P.K., Sakano H., Sakurai T., Satou M., Seki M., Shinn P., Yamada K., Shinozaki K., Submitted (OCT-2001) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Yu H.-H., Zisch A.H., Dodelet V.C., Pasquale E.B.;
*Multiple Signaling Interactions of Abl and Arg Kinases with EphB2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 43; DB 10; Length 131; Pred. No. 19; 6; Indels 1; Mismatches 6; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 11; Length 164;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Receptor.";
Submitted (JAN-2001) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ecker J., Theologis A., Davis R.W.;
Submitted (MAR-2002) to the EMBL/GenBank/DDBJ databases.
  Lin X.;
Submitted (MAR-2000) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                    Submitted (FEB-2002) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             164 AA; 17029 MW; DE8B75014A4CF272 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Hypothetical protein.
SEQUENCE 131 AA; 14339 MW; 3A33878DC8169802 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-JUN-2001 (TrEMBLrel. 17, Created)
01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             164 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11arity 57.1%; Pred. No. ... Conservative 2; Mismatratri
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL; AC003673; AAC09038.2; -. EMBL; AY059891; AAL24373.1; -. EMBL; AY093348; AAM13347.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 KKVIAPRRLPDPQILKS 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   44.88;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; AF339052; AAK08120.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6 PRRLPDPQILKSDT 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | | | | | | : | | : | | : | | : | | | PLRAPDPAITESDS 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarion hes 10; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRELIMINARY;
                                                                                   SEQUENCE FROM N.A. STRAIN-CV. COLUMBIA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             [1]
SEQUENCE FROM N.A.
                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ARG (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE
```

Query Match

REPARA SERVICE SERVICE

Best Loca Matches

**099P28** 

RESULT 13

a

ð

ö

Gaps

ö

ö

Gaps

ö

NON\_TER NON\_TER

Matches

ò ద

6 PRRLPDPQILKSDT 19 | ||:|| |||| 141 PNNLPNPSISNSDT 154

QQ QQ

Search completed: July 8, 2003, 16:27:56 Job time: 43.9231 secs

```
GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
```

July 8, 2003, 16:08:55; Search time 30 Seconds (without alignments) 53:300 Million cell updates/sec OM protein - protein search, using sw model Run on:

US-09-824-647-4 69 1 PDAKTQCPDDST 12 Title: Perfect score: Sequence: BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

908470 seqs, 133250620 residues Searched:

908470 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

/qeneseqp-embl/AA1985.DAT: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1980. /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1981. /SIDS2/gcgdata/geneseg/ /SIDS2/gcgdata/genesed A\_Geneseq\_101002: Database :

/SIDS2/gcgdata/geneseq/genesegp-emb1/AA2000.DAT: /SIDS2/gcgdata/geneseq/genesegp-emb1/AA2001.DAT: /SIDS2/gcgdata/geneseq/genesegp-emb1/AA2002.DAT: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1999.DAT: /SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1988. gcgdata/geneseq/geneseqp-emb1/AA199 /gcgdata/geneseq/geneseqp-embl/AA199 /gcgdata/geneseq/geneseqp-embl/AA199 /SIDS2/gcgdata/geneseq/geneseqp-embl/AA199 gcgdata/geneseq/geneseqp /SIDS2/gcgdata,

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

### SUMMARIES

	Description	Mouse GP88 autocr1	Rat epithelin prec	Mouse epithelin pr	Mouse GP88 autocri	Mouse granulin/epi	Granulin B. Homo	Human epithelin pr	Granulin sequence.	Human GP88 autocri	Human granulin/epi
	. OI	AAW85477	AAR14325	AAR14327	AAW85474	AAE20520	AAR41880	AAR14326	AAR48673		
	80	20	12	12	, 20	23	14	12	14	20	23
	Query Match Length DB ID	12	589	589	589	589	26	593	593	593	593
φ	Query Match	100.0	100.0	100.0	100.0	100:0	73.9	73.9	73.9	73.9	73.9
	Score	69	69	69	69	69	51	51	51	51	51
	Result No.	7	7	m	4	2	9		80	6	10

cer		Rat CNK1 protein k	Propionibacterium	Propionibacterium	Peptide #7330 enco	Human brain expres	Human bone marrow	Peptide #7453 enco	Human peptide enco		Human albumin fusi	Vesicular stomatit	_	Novel human diagno	Canine IgA. Canis	Listeria monocytog	Novel human diagno	Vesicular stomatit	Eucalyptus grandis	Bovine epithelin p	71	Peptide #4625 enco	#4725	Protein #4519 enco	Human brain expres	Human bone marrow	Peptide #4624 enco	Peptide #4724 enco	Peptide #4493 enco	Human peptide enco		ŭ		Arabidopsis thalfa	•
																<u>.</u> .				٠.															
AAB43971	AAR41886	AAW01792	AAU61612	AAU42060	ABB39824	AAM60551	AAM73207	AAM33416	ABG43054	AAB87388	ABG65366	AAB20288	ABP28856	ABG15111	AAR97754	ABB49837	ABG03476	AAB20290	AAB16327	AAR15426	AAY93769	ABB31974	ABB37219	ABB22520	AAM57928	AAM70351	AAM18190	AAM30687	AAM05811	ABG39996	AAG31665	AAB20289	AAG31664	AAG31663	
I			_	-	-	-	•	-		-	_	-	-	•		-		2				22 P		-					22 P	-	21 2	•	7	7	
~	Ä	18	7	Ä	~		•						23		٦	7	7	7	~													~	~	7	
621	57	565	121	323	37	37	. 37	37	37	94	94	234	258	322	339	351	446	511	118	179	318	398	398	398	398	398	398	398	398	398	474	511	541	583	
																						/	1												
3.9	62.3	9.4	9.0	6.5	5.1	5.1	55.1	55.1	5.1	5.1	5.1	5.1	55.1	5.1	5.1	5.1	5.1	2	n	3.6	3,6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	
7	9	'n	S	2	Ś	S	ຮ	S.	S		S	S		'n	'n	S	ß	S	S	S	2	Ŋ	S	S	S	'n	S	S	'n	'n	S	'n	ß	'n	
51	43	41	40	39	38	38	38	38	38	38	38	38	38	38	38	38	38	38	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	
																																		٠	
-	2	2	14	. 51	91	17	8	13	20	7.	22	23	24	25	56	27	82	53	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	
-1	' '		• •	• •	• •		.,	. ,	•	•	•	•	••	•	•	•	•	. •			. ,			. ,					·						

## ALIGNMENTS

AAW85477 standard; Peptide; 12 AA. 15-MAR-1999 (first entry) AAW85477;

RESULT 1 AAW85477 Mouse GP88 autocrine growth factor antigenic peptide P12T.

GP88; granulin; epithilin; mouse; growth factor; autocrine; tumour; cancer; viral infection; antagonist; therapy; diagnosis; antigen; antibody.

Mus sp.

WO9852607-A1.

26-NOV-1998.

98WO-US10555. 22-MAY-1998; 970S-0991862. 970S-0863079. 16-DEC-1997; 23-MAY-1997;

(SERR/) SERRERO G.

Serrero G;

WPI; 1999-045276/04.

Composition containing antagonist of growth factor GP88 - useful for treating cancer and viral diseases and also for diagnosing disease

us-09-824-647-4.rag

```
ET-1 is a bifunctional growth regulator, capable of stimulating the growth of some cell types while inhibiting the growth of others. ET-2 is functionally similar to ET-1 w.r.t. growth inhibitory bioactivity. In contrast, however, ET-2 is apparently not capable of eliciting the growth stimulatory cativity characteristic of ET-1 and, in fact, antagonises, this ET-1 activity. See also AAQ14338-40, AAQ14952-53, AAR14328-9 and AAR15315-20.
                                                                                                                                                                                                                                                          New cysteine-rich growth modulating proteins, epithelins - useful as inhibitors of neoplastic cell growth and to promote wound
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100.0%; Score 69; DB 12;
ilarity 100.0%; Pred. No. 0.0048;
Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              growth regulation; inhibition; stimulation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "claim 23, page 55"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EP ... claim 25, page 55"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /label= EP
/note= "claim 27, page 56"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /label= EP-1
/note= "claim 22, page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "claim 24, page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAR14327 standard; Protein; 589 AA
                                                                                                                                                                                                                                                                                                                                                Disclosure; Fig 18; 97pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     362.416
/label- EP
/note- "claim 26,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /label= precursor
/note= "claim 21,
91WO-DS02321.
                                          910S-0083796.
                                                                                                                                                                                                                                                                                                        healing and treat psoriasis
                                                                                                        (BRIM ) BRISTOL-MYERS SQUIB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /label- EP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mouse epithelin precursor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 PDAKTOCPDDST 12
||||||||||||||
208 PDAKTOCPDDST 219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         . 261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     280..335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /label-
                                                                                                                                                     Shoyab M, Plowman GD;
                                                                                                                                                                                             WPI; 1991-325168/44.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Local Similarity
Matches 12; Conserv
                                                                                                                                                                                                                    N-PSDB; AAQ14338.
                                          13-MAR-1991;
03-APR-1990;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17-JAN-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAR14327;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Key
Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAR14327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ð
                                                                          This is the amino acid sequence of peptide P12T, comprising amino acid residues P208-T219 of murine GP88 (see AAW85474). GP88 is an 88 Apy Squyoretian autocrine growth factor that is expressed in a tightly requiated manner in normal cells, is overexpressed and unregulated in highly tumorigenic cells derived from normal cells, and which acts as a stringently required growth stimulator for the tumorigenic cells. P12T was used in an attempt to raise neutralising antibodies to GP88 (see also AAW85478-79). Antagonists to GP88, such as anti-GP88 antibodies, are used to treat diseases but also viral infections. Anti-GP88 antibodies can also be used a singmostic reagents and to deliver toxins or other compounds to
                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%; Score 69; DB 20;
100.0%; Pred. No. 7.9e-05;
tive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ST; growth regulation; inhibition; stimulation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /label EP /note= "claim 17, page 54" 515..570 /label EP /note= "claim 18, page 55"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /label= EP-1
/note= "claim 12, page 54"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      362..416
/label- EP
/note- "claim 16, page 54"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "claim 14, page 54"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      'note= "claim 13, page 54"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Tabel= EP
'note= "claim 15, page 54"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /label- precursor
/note- "claim 11, page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAR14325 standard; Protein; 589 AA.
                                          Example 8; Page 45; 86pp; English.
from altered GP88 expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    'label= EP-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              label- EP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 PDAKTQCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 PDAKTQCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            280..335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Rat epithelin precursor.
                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
Watches 12; Conservat
                                                                                                                                                                                                                                                                                                                                                   GP88-expressing cells
                                                                                                                                                                                                                                                                                                                                                                                       12 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rattus rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WO9115510-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      17-0CT-1991
                                                                                                                                                                                                                                                                                                                                                                                         Seguence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAR14325;
```

RESULT 2

g

Protein

Protein

Peptide

Pept1de

Pept1de

Peptide

Protein

Gaps

ö

Length 589; Indels us-09-824-647-4.rag

```
WPI; 1999-045276/04.
N-PSDB; AAV82824.
                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
Matches 12; Conserv
                                                                                                                                                                                                                                                                                                                                                                                               Sequence 589 AA;
                                                                                             (SERR/) SERRERO G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Misc-difference
         WO9852607-A1.
                                                                16-DEC-1997;
23-MAY-1997;
                                               22-MAY-1998;
                            26-NOV-1998
                                                                                                                 Serrero G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAE20520;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mus sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAE20520
  g
                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                   the growth of some cell types while influiting the growth of others. FT-2 is functionally similar to ET-1 w.r.t. growth inhibitury bloactivity. In contrast, however, ET-2 is apparently not capable of eliciting the growth stimulatory activity characteristic of ET-1 and, in fact, antagonises this ET-1 activity characteristic of ET-1 and, see also AAQ14338-40, AAQ14952-53, AAR14328-9 and AAR15315-20.
                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GP88; granulin; epithilin; mouse; growth factor; autocrine; tumour; cancer; viral infection; antagonist; therapy; diagnosis.
                                                                                                                                                                                           New cysteine-rich growth modulating proteins, epithelins - useful as inhibitors of neoplastic cell growth and to promote wound healing and treat psoriasis
                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note= "K19T peptide, used to raise antibody"
562..575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note= "S14R peptide, used to raise antibody
                                                                                                                                                                                                                                                                                                                                                100.0%; Score 69; DB 12; Length 589; 100.0%; Pred. No. 0.0048; tive 0; Mismatches 0; Indels (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note= "P12T peptide used to raise antibody"
144..362
515..570
/label~ EP
/note= "claim 28, page 56"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      'note= "encoded by AGC"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note- "encoded by TGA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   note= "encoded by CTG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAW85474 standard; Protein; 589 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mouse GP88 autocrine growth factor.
                                                                                                                                                                                                                                  Disclosure; Fig 23; 97pp; English.
                                                                                              910S-0083796.
                                                                                                                         BRIM ) BRISTOL-MYERS SQUIB
                                                                           91WO-US02321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                1111111111
208 PDAKTQCPDDST 219
                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   208..219
                                                                                                                                                                                                                                                                                                                                                                                       1 PDAKTQCPDDST 12
                                                                                                                                              Plowman GD
                                                                                                                                                                                                                                                                                                                                        Ouery Match
Best Local Similarity
                                                                                                                                                                WPI; 1991-325168/44.
                                                                                                                                                                                                                                                                                                                               589 AA;
                                                                                                                                                                          N-PSDB; AAQ14340.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            15-MAR-1999
                                                                           03-APR-1991;
                                                                                              .3-MAR-1991;
                                                                                                      03-APR-1990;
                                      WO9115510-A
                                                        17-0CT-1991
                                                                                                                                              Shoyab M,
                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAW85474;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mus sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pept1de
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Peptide
 Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 4
                                                                                                                                                                                                                                                                                                                                                                                                                                               AAW85474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
```

```
This is the amino acid sequence of murine GP88, an 88 kDa glycoprotein autocrine growth factor and epithilin/granulin precursor that is expressed in a tightly regulated manner in normal cells, is overexpressed and unregulated in highly tumorigenic cells cells, is overexpressed and unregulated in highly tumorigenic cells derived from normal cells, and which acts as a stringently required growth stimulator for the tumorigenic cells. Inhibition of GP88 control in the tumorigenic cells results in an expression of action in the tumorigenic cells results in an inhibition of the tumorigenic properties of the overproducing cells. Murine GP88 cDN8 (see ANV82824) was obtained from the highly tumorigenic PC cell line. Antagonists to GP88 are used to treat diseases associated with increased expression of GP88 are used to rease specific antibodies (used as antagonists, as diagnostic reagents and for delivering toxins or other compounds to GP88.

C expressing cells) and to screen for antibodies. Methods are provided for diagnosing disease, or determining susceptibility to disease, resulting from altered GP88 activity.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mouse; granulin precursor; GP88; cytostatic; tumourigenicity; tamoxifen;
antineoplastic; antioestrogen therapy; skin cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                            Composition containing antagonist of growth factor GP88 - useful for treating cancer and viral diseases and also for diagnosing disease from altered GP88 expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /label= Unknown
/note= "Encoded by ATG"
344.362
/note= "Regions used as antigens to raise anti-GP88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                  慧.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mouse granulin/epithelin precursor (GP88) protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100.0%; Score 69; DB 20;
100.0%; Pred. No. 0.0048;
ive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Example 5; Fig 8A-D; 86pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAE20520 standard; Protein; 589 AA
98WO-US10555
                                                                  970S-0991862
970S-0863079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-JUL-2002 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            208 PDAKTOCPDDST 219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 PDAKTQCPDDST 12
```

```
The granulin inhibits keratinocytes and is useful in formulations for promoting the healing of wounds. This peptide was designated granulin B.
                                                                                                                                                                                                                                                                                           New cystine rich granulin peptide(s) from leucocyte(s) - are keratinocyte inhibitors useful topically for wound healing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 14; Length 56;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ET; growth regulation; inhibition; stimulation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 51; DB 14
Pred. No. 0.34;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     page 53*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   282..337
/label= EP-1
/note= "claim 2, page 53"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "claim 1, page 53"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /label= EP
/note= "claim 7, page 53"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /label= EP
/note= "claim 8, page 55"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /label= EP-2
/note= "claim 3, page 53"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAR14326 standard; Protein; 593 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "claim 6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "claim 4,
                                                                                                                                                                                                                                                                                                                                                             Claim 3; Page 28; 53pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /label= EP
/note= "claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             73.9%;
                                                             92WO-CA00089.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /label- EP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17-JAN-1992 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Hyman epithelin precursor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  24..180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 PDAKTOCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | | | | :::||| | | | 4 PDARSRCPDGST 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
'-ba 8; Conserve
                                                                                                                                                                                                                                           WPI; 1993-320328/40.
                                                                                                                                                 (solo/) solomon s.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   56 AA;
                                                             28-FEB-1992;
                                                                                                        03-FEB-1992;
                   05-AUG-1993.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO9115510-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Key
Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         the invention relates to a method for diagnosing tumourigenicity in a human. The method comprises obtaining a biological sample containing cells from the patient, detecting GPB8 in the cells of the sample, and determining the number of GPB8 positive cells in the sample, and determining the ratio of GPB8 positive cells to the total number of cells in the sample. The invention also relates to a method for determining in the sample. The invention also relates to a method for determining the ratio of GPB8 positive cells in the sample. The invention is useful for diagnosing tumourigenicity in a sample, such as blood, serum, plasma, urine, nipple aspirate, cerebrospinal fluid, liver, kidney, breast, bone, brain, lung, colon, or skin cancer. The method can be used to treat or prevent re-occurrence of cancer in a patient, by administering tamoxifen if the sample contains less than 10 % GPB8, or less than 5 % GPB8 positive cells.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Diagnosing tumorigenicity in a human, comprising obtaining a cell sample, detecting GP88 in the cells, and determining the number of GP88 positive cells in the sample –
antibodies"
562..575
/note= "Regions used as antigens to raise anti-GP88
antibodies"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Granulin; keratinocytes; wound healing; inhibition; peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 100.0%; Score 69; DB 23; Best Local Similarity 100.0%; Pred. No. 0.0048; Matches 12; Conservative 0; Mismatches 0;
                                                                                                                              ACA
                                                                                                                           /note- "Encoded by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     • AAR41880 standard; peptide; 56 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Disclosure; Fig 8; 50pp; English.
                                                                                                                                                                                                                                                                15-JUN-2001; 2001US-0880842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11111111111
208 PDAKTQCPDDST 219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 PDAKTQCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               granulocytes; leucocytes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2002-267529/31.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   589 AA;
                                                                                                                                                                                                                                                                                                                                                                                   (SERR/) SERRERO G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                N-PSDB; AAD32849
                                                                                                      Misc-difference
                                                                                                                                                                                                                                                                                                              23-MAY-1997;
08-DEC-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             22-APR-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       W09315195-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence:
```

Matches

g ò

Gaps

;

1; Indels

Gaps

ö

```
Composition containing antagonist of growth factor GP88 - useful for treating cancer and viral diseases and also for diagnosing disease from altered GP88 expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This is the amino acid sequence of human GP88, an 88 kDa glycoprotein autocrine growth factor and epithilin/granulin precursor that is expressed in a tightly regulated manner in normal cells, is overexpressed and unregulated in highly tumorigenic cells derived from normal cells, and which acts as a stringently required growth stimulator for the tumorigenic cells. Inhibition of GP88 expression or action in the tumorigenic cells results in an inhibition of the tumorigenic properties of the overproducing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GP88; granulin; epithilin; human; growth factor; autocrine; tumour; cancer; viral infection; antagonist; therapy; diagnosis.
                                                                                                                                     The granulin inhibits keratinocytes and is useful in formulations for promoting the healing of wounds.
                                                    New cystine rich granulin peptide(s) from leucocyte(s) - are keratinocyte inhibitors useful topically for wound healing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note= "A14R peptide used to raise antibody"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
340..364
//note= "E19V peptide used to raise antibody"
566..579
                                                                                                                                                                                                                       Length 593;
                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                         DB 14;
                                                                                                                                                                                                                                                          3; Mismatches
                                                                                                                                                                                                                  Score 51;
Pred. No. 4
                                                                                                          Disclosure; Figure 4c; 53pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human GP88 autocrine growth factor.
                                                                                                                                                                                                                                                                                                                                                                                                              AAW85475 standard; Protein; 593 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Example 5; Fig 9A; 86pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   97US-0991862
97US-0863079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  98WO-US10555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                              ||||:::||| ||
|PDARSRCPDGST 220
                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                           1 PDAKTQCPDDST 12
WPI; 1993-320328/40.
N-PSDB; AAQ49052.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 1999-045276/04.
N-PSDB; AAV82825.
                                                                                                                                                                                                                                         Local Similarity
les 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (SERR/) SERRERO G.
                                                                                                                                                                                      593 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO9852607-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                15-MAR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    22-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16-DEC-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   23-MAY-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   26-NOV-1998.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Serrero G;
                                                                                                                                                                                                                                                                                                                                                                                                                                             AAW85475;
                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                          209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 eptide
                                                                                                                                                                                                                                              Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                              RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                          ET-1 is a bifunctional growth regulator, capable of stimulating the growth of some cell types while inhibiting the growth of others. ET-2 is functionally similar to ET-1 w.r.t. growth inhibitory bioactivity. In contrast, however, ET-2 is apparently not capable of eliciting the growth stimulatory activity characteristic of ET-1 and, in fact, antagonises this ET-1 activity.

See also AAQ14338-40, AAQ14952-53, AAR14328-9 and AAR15315-20.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                          New cysteine-rich growth modulating proteins, epithelins - useful as inhibitors of neoplastic cell growth and to promote wound healing and treat psoriasis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Granulin; keratinocytes; wound healing; inhibition; peptide; granulocytes; leucocytes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 593;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note= "Glycine encoded by CAG."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note= "Valine encoded by ATG."
539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 51; DB 12;
Pred. No. 4.1;
3; Mismatches 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAR48673 standard; Protein; 593 AA.
                                                                                                                                                                                                                                                                                                                            Disclosure; Fig 22; 97pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                73.9%;
66.7%;
                                                         91WO-US02321.
                                                                                                                                         (BRIM ) BRISTOL-MYERS SQUIB.
                                                                                        91US-0083796
90US-0504508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    22-APR-1994 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    111:::111 11
209 PDARSRCPDGST 220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity 66.7
hes 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 PDAKTOCPDDST 12
                                                                                                                                                                          Shoyab M, Plowman GD;
                                                                                                                                                                                                         WPI; 1991-325168/44.
N-PSDB; AAQ14339.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Misc-difference 452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 593 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Granulin sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (SOLO/) SOLOMON S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens.
                                                         03-APR-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         03-FEB-1992;
                                                                                      13-MAR-1991;
03-APR-1990;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      W09315195-A
                        17-0CT-1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        05-AUG-1993
```

AAR48673;

RESULT 8 AAR48673

g

ö

Sequence Query Match

Best Loc Matches

Solomon S;

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The invention relates to a method for diagnosing tumourigenicity in a human. The method comprises obtaining a biological sample containing cells from the patient, detecting GPBB in the cells of the sample, and determining the number of GPBB positive cells in the sample, and determining the ratio of GPBB positive cells to the total number of cells in the sample. The invention also relates to a method for determining if a human patient is resistant to the antineoplastic effects of antioestrogen therapy. The method is useful for diagnosing tumourigenicity in a sample, such as blood, serum, plasma, urine, nipple
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   precursor; GP88; cytostatic; tumourigenicity; tamoxifen; antioestrogen therapy; skin cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Diagnosing tumorigenicity in a human, comprising obtaining a cell sample, detecting GPB8 in the cells, and determining the number of GPB8 positive cells in the sample -
                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note= "Region used as antigen to develop anti-human GP88 neutralising antibody"
cells. Antagonists to GPB8 are used to treat diseases associated with increased expression of GPB8, particularly cancer but also viral infections. Fragments of GPB8 are used to raise specific antibodies (used as antagonists, as diagnostic reagents and for addivening toxins or other compounds to GPB8 expressing cells) and to screen for antibodies. Methods are provided for diagnosing disease, or determining susceptibility to disease, resulting from
                                                                                                                                                                                                                                                                                                                                                                                                      ;
0
                                                                                                                                                                                                                                                                                                                                             20; Length 593;
                                                                                                                                                                                                                                                                                                                                                                                                      1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human granulin/epithelin precursor (GP88) protein.
                                                                                                                                                                                                                                                                                                                                       Score 51; DB 2
Pred. No. 4.1;
3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              'note= "Encoded by AAG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAE20521 standard; Protein; 593 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Disclosure; Fig 9B; 50pp; English.
                                                                                                                                                                                                                                                                                                                                       73.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   15-JUN-2001; 2001US-0880842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            970S-0863079.
                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity 66./v,
Lance 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-JUL-2002 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 PDAKTQCPDDST 12
                                                                                                                                                                                                                    altered GP88 activity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2002-267529/31.
N-PSDB; AAD32850.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (SERR/) SERRERO G.
                                                                                                                                                                                                                                                                              593 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US2002025543-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   granulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               antineoplastic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            23-MAY-1997;
08-DEC-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             28-FEB-2002.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Serrero G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAE20521;
                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAE20521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A STANDAR STAN
   8888888888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Polynucleotídes, polypeptides, antibodies, agonists and antagonists from the present invention may be used to treat immune disorders by activating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     dermatological; neuroprotective; cardiant; thrombolytic; coagulant; nootropic; vasotropic; antipsoriatic and antiangiogenic. The polynucleotides and polypeptides can be used for preventing, treating or ameliorating medical conditions and diagnosing pathological conditions.
aspirate, cerebrospinal fluid, liver, kidney, breast, bone, brain, lung, colon, or skin cancer. The method can be used to treat or prevent re-occurrence of cancer in a patient, by administering tamoxifen if the sample contains less than 10 % GPB8, or less than 5 % GPB8 positive cells. The present sequence is human granulin/epithelin precursor (GPB8)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    diagnosis; cytostatic; proliferative; vulnerary; immunomodulator; antidiabetic; antistralid; antihhematic; antihematic; antihematic; antiharial; antihital; antihematic; antibacterial; cardiant; dermatological; neuroprotective; thrombolytic; coagulant; nootropic; vasotropic; antipsoriatic; antianglogenic; gene therapy; inflammation; immune disorder; heematopoletic cell disorder; autoimmune disorder; all di
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAC77607 to AAC78448 encode the human cancer associated proteins given in AAB43398 to AAB44239. The proteins can have activities based on the tissues and cells the genes are expressed in. Example of activities
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               include: cytostatic; proliferative; vulnerary; immunomodulator; antidiabetic; antiasthmatic; antirheumatic; antinthritic; antithyroid; antiallergic; antibacterial; antiviral;
                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Novel isolated nucleic acids comprising sequences encoding peptides useful for treating or diagnosing e.g. cancer -
                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               haemostatic; thrombolytic; cardiovascular disorder; infection; neurological disease; drug screening.
                                                                                                                                                                                                                                                                                       Score 51; DB 23; Length 593; Pred. No. 4.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human; cancer associated gene; cancer antigen; detection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human cancer associated protein sequence SEQ ID NO:1416.
                                                                                                                                                                                                                                                                                                                              Pred. No. 4.1;
3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 11; Page 2094-2096; 2352pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAB43971 standard; Protein; 621 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (HUMA-) HUMAN GENOME SCI INC
                                                                                                                                                                                                                                                                                          73.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          08-MAR-2000; 2000WO-US05882.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        99US-0124270.
                                                                                                                                                                                                                                                      Query Match

Best Local Similarity 66./*,

Best Local 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      08-FEB-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                           111:::111 | 1
209 PDARSRCPDGST 220
                                                                                                                                                                                                                                                                                                                                                                                                                    1 PDÁKTOCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Rosen CA, Ruben SM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2000-587533/55.
N-PSDB; AAC78180.
                                                                                                                                                                                                                               593 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO200055350-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        12-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAB43971;
                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                       protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAB43971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             888888888888
                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
```

us-09-824-647-4.rag

```
AAW01792;
                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                              protein
                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAU61612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                    ö
            disorders, allegic reactions, graft versus host disease and organ rejection, modulate haemostatic or thrombolytic activity, modulate haemostatic or thrombolytic activity, modulate bacterial or viral infections. The peptides, nucleotides, antibodies, agonists and antagonists may be also be used in drug screens AAC78449 to AAC7857 and AAB44240 represent sequences used in the exemplification of the present invention.
                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
inhibiting the proliferation, differentiation or mobilisation of nume cells, to treat disorders of haematopoietic cells, autoimmune
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The granulin inhibits keratinocytes and is useful in formulations for promoting the healing of wounds. This peptide was designated granulin F.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                    Granulin; keratinocytes; wound healing; inhibition; peptide;
                                                                                                               Score 51; DB 21; Length 621;
Pred. No. 4.3;
3; Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     New cystine rich granulin peptide(s) from leucocyte(s) – an
keratinocyte inhibitors useful topically for wound healing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 57;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 43; DB 14; Le
Pred. No. 7;
3; Mismatches . 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAW01792 standard; Protein; 565 AA.
                                                                                                                                                                                                                        AAR41886 standard; peptide; 57 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 9; Page 34; 53pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             62.3%;
58.3%;
                                                                                                                 73.9%;
66.7%;
                                                                                                                                                                                                                                                                                                                                                                                        92WO-CA00089.
                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 62.3
Best Local Similarity 58.3
Matches 7; Conservative
                                                                                                                                                                   111:::||| ||
237 PDARSRCPDGST 248
                                                                                                                                                                                                                                                                                                              granulocytes; leucocytes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5 PDSQFECPDFST 16
                                                                                                                          Best Local Similarity 66.7
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 PDAKTQCPDDST 12
                                                                                                                                                       1 PDAKTQCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 1993-320328/40.
                                                                                                                                                                                                                                                                                                                                                                                                                              (SOLO/) SOLOMON S.
                                                                                                621 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           57 AA;
 or inhibition, immune cells,
                                                                                                                                                                                                                                                                                                                                                                                        28-FEB-1992;
                                                                                                                                                                                                                                                                                                                                 Homo saplens
                                                                                                                                                                                                                                                                                                                                                                                                          03-FEB-1992;
                                                                                                                                                                                                                                                              22-APR-1994
                                                                                                                                                                                                                                                                                                                                                  WO9315195-A
                                                                                                                                                                                                                                                                                                                                                                     05-AUG-1993
                                                                                                                                                                                                                                                                                 Granulin F.
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Solomon S;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
                                                                                               Sequence
                                                                                                                                                                                                                                           AAR41886;
                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 13
                                                                                                                                                                                                      RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAW01792
                                                                                                                                                                                                              AAR41886
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                          å
  8888888888888888
                                                                                                                                                        ð
                                                                                                                                                                         g
```

```
SADHO syndrome; synovitis; acne; pustulosis; hypertosis; osteomyelitis; uveitis; endophthalmitis; bone; joint; central nervous system; ELISA; inflammatory lesion; acne vulgaris; enzyme linked immunosorbent assay;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The present sequence represents the CNK1 protein kinase derived from rat. The gene encoding this sequence is homologous to CDC7 which originates from a mammalian and controls the cell cycle.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CNK1 gene encodes polypeptide with protein kinase activity – is homologous to Saccharomyces cerevisiae CDC7 cell cycle regulatory
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                   ъ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 41; DB 18; Length 565; 
Pred. No. 1.7e+02; 
3; Mismatches 3; Indels
                                                                                                   Protein kinase; enzymatic; Saccharomyces cerevisiae; CDC7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Propionibacterium acnes immunogenic protein #22508.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               dermatological; osteopathic; neuroprotectant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAU61612 standard; Protein; 121 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Example 1; Page 6; 9pp; Japanese.
                                                                                                                                cell cycle regulatory protein
                                                                                                                                                                                                                                                                                                                                                                                                                                           (SHKJ ) SHINGLJUTSU JIGYODAN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            21-APR-2000; 2000US-199047P.
02-JUN-2000; 2000US-208841P.
07-JUL-2000; 2000US-216747P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      59.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           20-APR-2001; 2001WO-US12865.
                                                                                                                                                                                                                                                                                                                                       95JP-0138152
                                                                                                                                                                                                                                                                                                                                                                                        95JP-0138152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 27-FEB-2002 (first entry)
30-SEP-1997 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         375 PEVLTKCPDQTT 386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 59.4
Best Local Similarity 50.0
Matches 6; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 PDAKTQCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Propionibacterium acnes
                                                Rat CNK1 protein kinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 1997-081085/08.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        565 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      N-PSDB; AAT59400.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO200181581-A2.
                                                                                                                                                                                 Rattus rattus
                                                                                                                                                                                                                      JP08322571-A.
                                                                                                                                                                                                                                                                                                                                       05-JUN-1995;
                                                                                                                                                                                                                                                                                                                                                                                          05-JUN-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-NOV-2001.
                                                                                                                                                                                                                                                                                  10-DEC-1996.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAU61612;
```

```
Sequences AAU39105-AAU68017 represent Propionibacterium acnes immunogenic polypeptides. The proteins and their associated DNA sequences are used in the treatment, prevention and diagnosis of medical conditions caused by P. acnes. The disorders include SAPHO syndrome (synovitis, acne, pustulosis, hypertosis and osteonyelitis), uveitis and endophthalmitis. P. acnes is also involved in infections of bone, joints and the central rervous system, however it is particularly involved in the inflammatory lesions associated with acne vulgaris. A method for detecting the presence or absence of P. acnes in a patient comprises contacting a sample with a binding agent that binds to the proteins of the invention and determining the amount of bound protein in the sample. The collypeptides may be used as antigens in the production of antibodies specific for P. acnes proteins in the production of antibodies specific for P. acnes proteins in the production of antibodies and the accivity of P. acnes polypeptides and the activity of P. acnes polyperides and the acnes proteins.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               therefore treat P. acnes infections. The antibodies may also be used as diagnostic agents for determining P. acnes presence, for example, by enzyme linked immunosorbent assay (ELISA).

Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                             Propionibacterium acnes polypeptides and nucleic acids useful for vaccinating against and diagnosing infections, especially useful
                                                                   Bhatia A;
                                                            Mitcham JL, Wang SS,
Jen S, Carter D;
                                                                                                                                                                                                                                                                                                                                                             Example 1; SEQ ID No 22807; 1069pp; English.
                                                         Persing DH, M
e J, Zhang Y,
                                                                                                                                                                                                                                                                                                             treating acne vulgaris
(CORI-) CORIXA CORP.
                                                                                                                                                WPI; 2001-616774/71.
N-PSDB; AAS59619.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121 AA;
                                                                                         L'maisonneuve J,
                                                            Skeiky YAW,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
```

```
ö
                            Gaps
Score 40; DB 22; Length 121;
Pred. No. 47;
2; Mismatches 2; Indels
                         2; Indels
 58.0%;
            Local Similarity 60.0
nes 6; Conservative
                                                 1 PDAKTQCPDD 10
                                                               | |: :||||
PGARRCPDD 77
  Query Match
                                                  ð
```

68

셤

Propionibacterium acnes immunogenic protein #2956 AAU42060 standard; Protein; 323 AA. 27-FEB-2002 (first entry) AAU42060; RESULT 15 

SAPHO syndrome; synovitis; acne; pustulosis; hypertosis; osteomyelitis; uveitis; endophthalmitis; bone; joint; central nervous system; ELISA, inflammatory lesion; acne vulgaris; enzyme linked immunosorbent assay; dermatological; osteopathic; neuroprotectant.

Propionibacterium acnes

WO200181581-A2.

01-NOV-2001

20-APR-2001; 2001WO-US12865

2000US-199047P. 2000US-208841P. 2000US-216747P. 21-APR-2000; 02-JUN-2000; 07-JUL-2000;

(CORI-) CORIXA CORP

Bhatia A; Mitcham JL, Wang SS, Jen S, Carter D; Persing DH, M L'maisonneuve J, YAW, Skeiky

WPI; 2001-616774/71. N-PSDB; AAS59516.

Propionibacterium acnes polypeptides and nucleic acids useful for vaccinating against and diagnosing infections, especially useful for treating acide vulgaris -

SEQ ID No 3255; 1069pp; English. Claim 3;

Sequences AAU39105-AAU68017 represent Propionibacterium acnes immunogenic diagnostic agents for determining P. acnes presence, for example, by enzyme linked immunosorbent assay (ELISA).

Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at ftp.wipo.int/pub/published\_pct\_sequences. P. acnes. The discretarion and unagness of measure contractions. The discretar include SAPHO syndrome (synovitis, acne, pustulosis, hypertosis and osteomyelitis), uveitis and endophthalmitis. P. ácnes is also involved in infections of bone, joints and the central nervous system, however it is particularly involved in the inflammatory lesions associated with acne vulgaris. A method for detecting the presence or absence of P. acnes in a patient comprises contacting a sample with a binding agent that binds to the proteins of the invention and determining the amount of bound protein in the sample. The polypeptides may be used as antigens in the production of antibodies specific for P. acnes proteins. These antibodies can be used to downregulate expression and activity of P. acnes polypeptides and therefore treat P. acnes infections. The antibodies may also be used as polypeptides. The proteins and their associated DNA sequences are used the treatment, prevention and diagnosis of medical conditions caused by 

323 AA; Seguence

Gaps ö Score 39; DB 22; Length 323; Pred. No. 1.9e+02; 3; Mismatches 3; Indels 56.5%; 50.0%; Ouery Match
Best Local Similarity 50.0.

ö

1 PDAKTQCPDDST 12 |: : |||||: PEPQLGCPDDSS 50 ð a

completed: July 8, 2003, 16:24:14 : 31 secs Job time Search

```
GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
```

OM protein - protein search, using sw model

July 8, 2003, 16:21:00; Search time 7.38462 Seconds (without alignments) 47.812 Million cell updates/sec Run on:

US-09-824-647-4 69

1 PDAKTQCPDDST 12 Title: ' Perfect score: Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

262574 seqs, 29422922 residues Searched:

262574 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database:

Issued\_Patents\_AA:

/cgn2\_6/ptodata/1/1aa/5A\_COMB.pep:\*/cgn2\_6/ptodata/1/1aa/5B\_COMB.pep:\*

/cgn2\_6/ptodata/1/laa/6A\_COMB.pep:\* /cgn2\_6/ptodata/1/laa/6B\_COMB.pep:\* /cgn2\_6/ptodata/1/laa/PcTUS\_COMB.pep:\* /cgn2\_6/ptodata/1/laa/PacKfiles1.pep:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

### SUMMARIES

																					٠								
			App11	Appli	App11	Appli	Appli	Appli	Appli	Appli	Appli	App11	Appli	Appli	Appli	, Appl	Appli	Appli	Appli	Appli	Appli	Appli	Appli	Appli	8, App	Appli	Appli	Appli	Appli
		Ę.	4	7	ý	'n	ý	'n	ý	'n	'n	ý	4	Ť	4	17	Ą	'n	4	æ	æ	æ	8	'n	238	′	۲,	7	'n
		Description	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence								
		1																	-										
			JS-08-991-862-4	JS-07-668-648-2	JS-07-668-648-6	US-08-429-998-2	US-08-429-998-6	JS-08-431-333-2	JS-08-431-333-6	US-08-991-862-2	PCT-US91-02321-2	PCT-US91-02321-6	JS-07-668-648-4	JS-08-429-998-4	JS-08-431-333-4	JS-08-991-862-17	PCT-US91-02321-4	JS-08-336-891-2	PCT-US95-13795-4	US-07-668-648-8	JS-08-429-998-8	US-08-431-333-8	PCT-US91-02321-8	JS-09-233-989-5	JS-09-564-805-238	JS-09-191-647-7	JS-09-540-245A-7	<b>JS-09-540-153-7</b>	US-09-182-024A-5
		A :	Б	Ď	Ď	Б	ö	ö	Б	5	ጟ	ጁ	ö	Ď	ö	Ď	ጁ	ö	ď	Б	Б	Ĕ.	ď,	Б	Б	Б	Б	Б	Ď
		BB	4	П	П	7	7	7	7	4	Ŋ	Ŋ	7	a	7	7	2	-	Ŋ	H		7	S	7	4	m	4	7	4
		Length DB	12	589	589	589	589	589	589	589	589	589	593	593	593	593	593	343	343	179	179	179	179	561	1040	1480	1480	1480	1480
•	Query	Match	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	73.9	73.9	73.9	73.9	73.9	55.1	55.1	53.6	53.6	53.6	53.6	52.2	52.2	52.2	52.2	52.2	52.2
		Score	69	69	69	69	69	69	69	69	69	69	51	. 51	51	. 51	51	38	38	. 37	37	37	37	36	36	36	36	36	36
	Result	No.	1	7	e	4	'n	9	١.	80	6	10	11	12	13	14	15	16	17	18	19	70	21	22	23	24	25	56	27

Sequence 2, Appli		Sequence 220, App	Sequence 220, App	Sequence 220, App	Sequence 60, Appl	09	Sequence 60, Appl	, 09	Sequence 1, Appl1	Sequence 22, Appl	Sequence 3, Appli	Sequence 6, Appli	Sequence 8, Appli	Sequence 6, Appli	Sequence 8, Appl1	Sequence 4, Appli	Sequence 4, Appli
PCT-0391-09055-2	US-08-190-802A-220	US-08-477-346-220	US-08-473-089-220	US-08-487-072A-220	US-08-190-802A-60	US-08-477-346-60	US-08-473-089-60	US-08-487-072A-60	US-08-742-621-1	US-09-191-608-22	US-08-742-440A-3	US-08-821-984-6	US-08-821-984-8	US-09-329-749-6	US-09-329-749-8	US-07-789-915A-4	US-08-005-002C-4
r	-	4	4	4	-	4	4	7	~	4	~	m	m	4	4	H	-
1480	35	32	35	35	488	488	488	488	388	388	407	529	529	529	529	809	809
52.2	51.4	51.4	51.4	51.4	51.4	51.4	51.4	51.4	50.7	50.7	50.7	50.7	7.50.7	50.7	50.7	50.7	50.7
36	35.5	35.5	35.5	35.5	35.5	35.5	35.5	35.5	35	32	35	35	35	35	35	35	35
. 28	56	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45

### ALIGNMENTS

```
; LOCATION: (1)...(12)
; OTHER INFORMATION: Internal peptide of mouse GP88 used to raise the confirm information: antisera against the GP88 used in the GPBR INFORMATION: immunoaffinity step.
                                                                                                                      APPLICANT: Serrero, Ginette
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE REFERENCE: Z9996.488/P001-A
CURRENT APPLICATION NUMBER: US/08/991,862
GURRENT FILING DATE: 1998-08-17
EARLIER APPLICATION NUMBER: 08/863,862
EARLIER FILING DATE: 1997-05-23
                                             Sequence 4, Application US/08991862 Patent No. 6309826
                                                                                                                                                                                                                                                                                                              NUMBER OF SEQ ID NOS: 17
SOFTWARE: Patentin Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: PRT
ORGANISM: mouse granulin
                                                                                                      GENERAL INFORMATION:
RESULT 1
US-08-991-862-4
                                                                                                                                                                                                                                                                                                                                                               SEQ ID NO 4
LENGTH: 12
```

ö Length 12; 0; Indels 100.0%; Score 69; DB 4; 100.0%; Pred. No. 1e-05; iive 0; Mismatches 0 Local Similarity 100. nes 12; Conservative Query Match Best Loca Matches

ö

Gaps

1 PDAKTQCPDDST 12 ò

Sequence 2, Application US/07668648 Patent No. 5416192 GENERAL INFORMATION: 1 PDAKTOCPDDST 12 US-07-668-648-2 RESULT 2 g

ENERAL ARE SHOUTH WOHNTHEU

APPLICANT: Shoyab, Mohammeu

APPLICANT: PLOWARN, Gregory D.

TITLE OF INVENTION: EPITHELINS: NOVEL CYSTEINE-RICH GROWTH

TITLE OF INVENTION: MODULATING PROFEINS E: Pennie & Edmonds 1155 Avenue of the Americas CORRESPONDENCE ADDRESS: ADDRESSEE: Pennle & STREET:

Gaps

ö

```
Patent No. Journal Republicant: Showarion:
APPLICANT: Showman, Gregory D.
APPLICANT: Plowman, Gregory D.
TAVENTION: EPITHELINS: NOVEL CYSTEINE-RICH GROWTH
                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Shoyab, Mohammed
APPLICANT: Plowman, Gregory D.
TITLE OF INVENTION: EPITHELINS: NOVEL CYSTEINE-RICH GROWTH
TITLE OF INVENTION: MODULATING PROTEINS
CORRESPONDENCES: 12
CORRESPONDENCE ADDRESS:
                                                             Length 589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 589;
                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Patentin Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100.0%; Score 69; DB 2; 100.0%; Pred. No. 0.0007;
                                                           Query Match 100.0%; Score 69; DB 1; Best Local Similarity 100.0%; Pred. No. 0.0007; Matches 12; Conservative 0; Mismatches 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REGISTRATION NUMBER: 18,872
REFERENCE/DOCKET NUMBER: 5624-161-999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/429,998
FILING DATE: 27-APR-1995
CLASSIFICATION: 514
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/668,648
FILING DATE: 13-MAR-1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADDRESSEE: Pennie & Edmonds
STREET: 1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                             Sequence 2, Application US/08429998 Patent No. 5885961 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 6, Application US/08429998
Patent No. 5885961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELECOMMUNICATION INFORMATION TELEPHONE: (212)790-9090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME: Misrock, S. Leslie
REGISTRATION NUMBER: 18,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEFAX: (212) 869-9741 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   : 589 amino acids
amino acid
                                                                                                                                                                                        208 PDAKTQCPDDST 219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       208 PDAKTQCPDDST 219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 100.
Best Local Similarity 100.
Matches 12; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 PDAKTQCPDDST 12
                                                                                                                                                1 PDAKTQCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE CHARACTERISTICS
; MOLECULE TYPE: protein US-07-668-648-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; MOLECULE TYPE: protein US-08-429-998-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CITY: New York
STATE: New York
COUNTRY: USA
ZIP: 10036
                                                                                                                                                                                                                                                                         JS-08-429-998-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-08-429-998-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 5
                                                                                                                                                                                                                                                        RESULT 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 6, Application US/07668648
Patent No. 5416192
Patent No. 5416192
PAPPLICANT: Shoyab, Mohammed
APPLICANT: Plowman, Gregory D.
TITLE OF INVENTION:
TITLE OF INVENTION: PPITHELINS: NOVEL CYSTEINE-RICH GROWTH
TITLE OF INVENTION: MODULATING PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOFTWARE: Patentin Release #1.0, Version #1.25
JURRENT APPLICATION DATA:
APPLICATION UNMER: US/07/668,648
FILING DATE: 19910819
                                                                                                                    SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/668,648
FILING DATE: 19910819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 69; DB 1;
Pred. No. 0.0007;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE: Pennie & Edmonds
STREET: 1155 Ayenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                            COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                            CLASSIFICATION: 514
ATTORNEY/AGENT INFORMATION:
NAME: Mistrock, S. Leslie
REGISTRATION NUMBER: 18,872
REPEROCE/OCKET NUMBER: 5624
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212)799-9990
TELEPHONE: (212)799-9990
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME: Misrock, S. Leslie
REGISTRATION NUMBER: 18,872
REFERENCE/DOCKET NUMBER: 56
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100.0%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                          : 589 amino acids
AMINO ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEFAX: (212) 869-9741
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LENGTH: 589 amino acids TYPE: AMINO ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               208 PDAKTQCPDDST 219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 100.
Best Local Similarity 100.
Matches 12; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 PDAKTQCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; MOLECULE TYPE: protein US-07-668-648-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CORRESPONDENCE ADDRESS:
ADDRESSEE: Pennie &
                                         COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           New York
: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COUNTRY: US
COUNTRY: U
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: AMI
TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -668-648-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
```

ö

Gaps

```
ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 589;
                                                                                                                                                                                                                                                                                                                          Score 69; \ DB 2; Length 589; Pred. No. 0.0007;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                               0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 100.0%; Score 69; DB 2; Best Local Similarity 100.0%; Pred. No. 0.0007; Matches 12; Conservative 0; Mismatches 0
NAME: Misrock, S. Leslie
REGISTRATION NUMBER: 18,872
REFERENCE/DOCKET NUMBER: 5624-161-999
TELECOMUNICATION INFORMATION:
TELEPHONE: (212)790-900
NFORMATION:
                                                                                                                                                                                                                                                                                                                                                               0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Plowman, Gregory D.
TITLE OF INVENTION: EPITHELINS: NOVEL C.
TITLE OF INVENTION: WODULATING PROTEINS
NUMBER OF SEQUENCES: 12
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             E: Pennie & Edmonds
1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE: 27-APR-1995
CLASSIFICATION: 536
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/668,648
FILING DATE: 13-WAR-1991
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: US/08/431,333
FILING DATE: 27-APR-1995
CLASSIFICATION: 536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDIUM TYPE: Floppy disk COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: Patentin Dail
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 6, Application US/08431333
Patent No. 5965723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE/DOCKET NUMBER: 56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELECOMMUNICATION INFORMATION
                                                                                                                                                                                                                                                                                                                            100.0%;
100.0%;
                                                                                                                                TELEPHONE: (212)790-9090
TELEFAX: (212) 869-9741
INFORMATION FOR SEQ ID NO: 2-
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME: Misrock, S. Leslie
                                                                                                                                                                                                           LENGTH: 589 amino acids TYPE: amino acid TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEFAX: (212) 869-9741 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        589 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                               208 PDAKTQCPDDST 219
                                                                                                                                                                                                                                                                                                                            Query Match 100.
Best Local Similarity 100.
Matches 12; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                       1 PDAKTOCPDDST 12
                                                                                                                                                                                                                                                                MOLECULE TYPE: protein US-08-431-333-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNTRY: USA
ZIP: 10036
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         New York
: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADDRESSEE:
STREET: 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-08-431-333-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-08-431-333-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-08-431-333-2

Sequence 2, Application US/08431333

Patent No. 5965723

GENERAL INFORMATION:
APPLICANT: Shownan, Gregory D.
TITLE OF INVENTION:
PITLE OF INVENTION:
NUMBER OF SEQUENCES: 12

CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDIUM TYPE: Floppy disk
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/431,333
FILING DATE: 27-APR-1995
CLASSIFFCATION: 536
                                                                                                                                                                                                                                                                SOFWARE: Patentin Release #1.0, Version #1.25 SOFWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/429,998
FILING DATE: 27-APR-1995
CLASSIFICATION: 514
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/668,648
FILING DATE: 13-MAR-1991
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 69; DB 2;
Pred. No. 0.0007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME: Misrock S. Leslie
REGISTRATION NUMBER: 18,872
REFERENCE/DOCKET NUMBER: 5624-161-999
TELECOMMUTCATION INFORMATION:
TELEFHONE: (212)790-9090
TELEFRAX: (212) 869-9741
INFORMATION FOR SEQ ID NO: 6:
                       MODULATING PROTEINS
                                                                           ADDRESSEE: Pennie & Edmonds
STREET: 1155 Avenue of the Americas
CITY: New York
STATE: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US 07/668,648
                                                                                                                                                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       : 589 amino acids
amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  208 PDAKTQCPDDST 219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION DATA:
APPLICATION NUMBER: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; MOLECULE TYPE: protein US-08-429-998-6
                                                             CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
Matches 12; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              linear
                                                                                                                                                          USA
                                                                                                                                                                          10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 6
```

a

Gaps

Gaps

ö

ò 셤

```
Sequence 6, Application PC/TUS9102321
Sequence 6, Application PC/TUS9102321
GENERAL INFORMATION:
APPLICANT: Shoyab, Mohammed
APPLICANT: Ployman, Gregory D.
TITLE OF INVENTION: EPITHELINS: NOVEL CYSTEINE-RICH GROWTH
TITLE OF INVENTION: MODULATING PROFEINS
NUMBER OF SEQUENCES: 12
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NOVEL CYSTEINE-RICH GROWTH
                   Length 589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                     . 0.0007;
0:0007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOFTWARE: PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 69; DB 5;
Pred. No. 0.0007;
                 Score 69; DB 5;
Pred. No. 0.0007;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                 ADDRESSEE: Bristol-Myers Squibb Company
STREET: 3005, First Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
APPLICANT: Shoyab, Mohammed
APPLICANT: Plowman, Gregory D.
TITLE OF INVENTION: EPITHELINS: NOVEL CY
TITLE OF INVENTION: MODULATING PROFEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                : Pennie & Edmonds
1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US91/02321
FILING DATE: 19910403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 4, Application US/07668648 Patent No. 5416192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CLASSIFICATION: 514
ATTORNEY/AGENT INFORMATION:
NAME: POOR, Brian W.
RESISTRATION NUMBER: 32,928
REFERENCE/DOCKET NUMBER: ON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELECOMMUNICATION INFORMATION:
TELEPHONE: (206)728-4800
                 Query Match 100.0%;
Best Local Similarity 100.0%;
Matches 12; Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ilarity 100.0%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LENGTH: 589 amino acids TYPE: AMINO ACID
                                                                                                                          208 PDAKTQCPDDST 219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      208 PDAKTQCPDDST 219
                                                                                                 1 PDAKTQCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 PDAKTOCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            , MOLECULE TYPE: protein PCT-US91-02321-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQUENCES: 1.
CORRESPONDENCE ADDRESS:
ADDRESSEE: Pennie & B
STREET: 1155 Avenue o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STATE: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Similarity
Matches 12; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   linear
                                                                                                                                                                                                                                                                                                                                                                                                                              STREET: SUCCETY: Seattle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       USA
                                                                                                                                                                                                          RESULT 10
PCT-US91-02321-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ద
                                                                                                       õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                    APPLICANT: Serrero, Ginette
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE REFERENCE: 2996.488/POUL-A
CURRENT APPLICATION NUMBER: US/08/991,862
CURRENT FILING DATE: 1998-08-17
EARLIER APPLICATION NUMBER: 08/863,862
EARLIER FILING DATE: 1997-05-23
NUMBER OF SEQ ID NOS: 17
SOFTWARE: Patentin Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Shoyab, Mohammed
APPLICANT: Plowman, Gregory D.
TITLE OF INVENTION: BPITHELINS: NOVEL CYSTEINE-RICH GROWTH
TITLE OF INVENTION: MODULATING PROTEINS
CORRESPONDENCE: 12
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100.0%; Score 69; DB 4; Length 589; 100.0%; Pred. No. 0.0007; Live 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ZIP: 98121
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESSEE: Bristol-Myers Squibb Company
STREET: 3005 First Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: PCT/US91/02321
FILING DATE: 19910403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 2, Application PC/TUS9102321 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                      ; TYPE: PRT
; ORGANISM: Mouse epithelin/granulin
US-08-991-862-2
                                                                                                                                     Sequence 2, Application US/08991862
Patent No. 6309826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION: 514
ATTORNEY/AGENT INFORMATION:
NAME: Poor, Brian W.
REGISTRATION NUMBER: 32,928
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE/DOCKET NUMBER: ON FELECOMMUNICATION: TELEPHONE: (206)728-4800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         : 589 amino acids
AMINO ACID
                   11111111111111
208 PDAKTQCPDDST 219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1111111111
208 PDAKTQCPDDST 219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 100.
Best Local Similarity 100.
Matches 12; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
1 PDAKTQCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 PDAKTOCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CITY: Seattle
STATE: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear
                                                                                                                                                                                   GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY:
                                                                                                   RESULT 8
US-08-991-862-2
                                                                                                                                                                                                                                                                                                                                                                                                                   LENGTH: 589
                                                                                                                                                                                                                                                                                                                                                                                             SEQ ID NO 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 9
```

g

ò

Gaps ö

```
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                      ö
                                                                                                                                Length 593; 🙀
                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Shoyab, Mohammed
APPLICANT: Plowman, Gregory D.
TITLE OF INVENTION: EPTTHELINS: NOVEL CYSTEINE-RICH GROWTH
TITLE OF INVENTION: MODULATING PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 593;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1; · Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOFWHARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/431,333
FILING DATE: 27-APR-1995
CLASSIFICATION: 536
CLASSIFICATION DATA:
APPLICATION NUMBER: US/07/668,648
FILING DATE: 13-MAR-1991
ATTORNEY/AGENT INFORMATION:
                                                                                                                                DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 51; DB;
Pred. No. 0.7;
3; Mismatches
                                                                                                                                                                      3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME: Misrock, S. Leslie
REGISTRATION UNBER: 18,872
REFERENCE/DOCKET NUMBER: 5624-161-999
FELECOMMUNICATION INFORMATION:
                                                                                                                            Score 51;
Pred. No. 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; Sequence 17, Application US/08991862
; Patent No. 6309826
                                                                                                                                                                                                                                                                                                                           US-08-431-333-4; Sequence 4, Application US/08431333; Patent No. 5965723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pennie & Edmonds
                                                                                                                                73.9%;
66.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE CHARACTERISTICS:
LENGTH: 593 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEFAX: (212) 869-9741 INFORMATION FOR SEQ ID NO:
                : 593 amino acids
amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        209 PDARSRCPDGST 220
                                                                                                                                                                                                                                  111:::111 11
209 PDARSRCPDGST 220
                                                                                                                Query Match
Best Local Similarity 66.7.
8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 73.9
Best Local Similarity 66.7
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 PDAKTQCPDDST 12
SEQUENCE CHARACTERISTICS:
LENGTH: 593 amino acid
                                                                                                                                                                                                            1 PDAKTQCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; MOLECULE TYPE: protein US-08-431-333-4
                                              ; TOPOLOGY: linear; MOLECULE TYPE: protein US-08-429-998-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CITY: New York
STATE: New York
                                                                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 14
US-08-991-862-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NOVEL CYSTEINE-RICH GROWTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 1; Length 593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READBLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBN PC compatible
COMPUTER: FOR PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DAYA:
APPLICATION NUMBER: US/08/429,998
FILING DATE: 27-APR-1995
CLASSIFICATION: 514
                                                                                                                                SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/668,648
FILING DATE: 19910819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 51; DB
Pred. No. 0.7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 4, Application US/08429998
Patent No. 588561
GENERAL INFORMATION:
APPLICANT: Shoyab, Mohammed
APPLICANT: PLOWMEN, GENEGOLY D.
TITLE OF INVENTION: EPITHELINS: NOVEL C'ITILE OF INVENTION: MODULATING PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE/DOCKET NUMBER: 5624-161-999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADDRESSEE: Pennie & Edmonds
STREET: 1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/668,648
FILING DATE: 13 MAR-1991
ATTORNEY/AGENT INFORMATION:
NAME: MISTOCK, S. Leslie
REGISTRATION NUMBER: 18,872
                                                                            MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                            CLASSIFICATION: 514
ATTORNEY/AGENT INFORMATION:
NAME: Misrock, S. Leslie
REGISTRATION NUMBER: 18,872
REFERENCE/DOCKET NUMBER: 5624
TELECHONE: (212)790-9090
TELEFAX: (212) 869-9741
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           73.9%;
66.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEFAX: (212) 869-9741 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                             : 593 amino acids
AMINO ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity 66...
Local Similarity 66...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              111:::||| ||
209 PDARSRCPDGST 220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 PDAKTQCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQUENCES: 12
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; MOLECULE TYPE: protein US-07-668-648-4
                                                            COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                   linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New York
    New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           New York
                      USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10036
                                      10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                   TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COUNTRY:
    STATE: N
COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
```

Search completed: July 8, 2003, 16:30:18 Job time: 9.38462 secs

```
APPLICANT: Serrero, Ginette

TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE REFERENCE: 29996.488/P001-A
CURRENT APPLICATION NUMBER: US/08/991,862
CURRENT FILING DATE: 1999-08-17
EARLIER APPLICATION NUMBER: 08/862
EARLIER FILING DATE: 1997-05-23
NUMBER OF SEQ ID NOS: 17
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 17
LENGTH: 593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Shoyab, Mohammed
APPLICANT: Shoyab, Mohammed
APPLICANT: Plowman, Gregory D.
TITLE OF INVENTION: EPITHELINS: NOVEL CYSTEINE-RICH GROWTH
TITLE OF INVENTION: MODULATING PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 5; Length 593;
                                                                                                                                                                                                                                                                                                                                                     DB 4; Length 593;
                                                                                                                                                                                                                                                                                                                                                                                                  1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US91/02321
FILING DATE: 19910403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CORRESPONDENCE ADDRESS:
ADDRESSEE: Bristol-Myers Squibb Company
STREET: 3005 First Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REGISTRATION NUMBER: 32,928
REFERENCE/JOCKET NUMBER: 0N0071A-PC
ELECOMMUNICATION:
TELEPHONE: (206)728-4800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PCT-US91-02321-4; Sequence 4, Application PC/TUS9102321; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CLASSIFICATION: 514
FTORNEY/AGENT INFORMATION:
NAME: Poor, Brian W.
REGISTRATION NUMBER: 32,9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE CHARACTERISTICS:
LENGTH: 593 amino acids
TYPE: AMINO ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 PDAKTOCPDDST 12
|||:::||| ||
209 PDARSRCPDGST 220
                                                                                                                                                                                                                                                                                                                                                                                                                                         1 PDAKTOCPDDST 12
|||:::||| ||
209 PDARSRCPDGST 220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 73.9
Best Local Similarity 66.7
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                     Query Match 73.9
Best Local Similarity 66.7
Matches 8; Conservative
                                                                                                                                                                                                                                                                                     ; ORGANISM: Human GP88 cDNA
US-08-991-862-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          INFORMATION FOR SEQ ID NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; TOPOLOGY: linear
; MOLECULE TYPE: protein
PCT-US91-02321-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     : Seattle
3: Washington
FRY: USA
98121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COUNTRY:
                                                                                                                                                                                                                                                                   PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð
```

셤

```
(without alignments)
119.483 Million cell updates/sec
                                                                                                                  July 8, 2003, 16:24:26; Search time 11.6923 Seconds
                                                                                                                                                                                                                                                                                                                                                                               445758
GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                 Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                         445758 seqs, 116419773 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Published_Applications_AA:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Post-processing: Minimum Match 08
Maximum Match 1008
Listing first 45 summaries
                                                                             - protein search, using sw model
                                                                                                                                                                                                                                                                             BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                         Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                     1 PDAKTQCPDDST 12
                                                                                                                                                                                                US-09-824-647-4
69
                                                                                                                                                                                                  Title:
Perfect score:
                                                                                                                                                                                                                                                                                 Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Database :
                                                                             OM protein
                                                                                                                                                                                                                                                                                                                                            Searched:
                                                                                                                                                                                                                                         Sequence:
                                                                                                                    Run on:
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

/cgn2\_6/ptodata/2/pubpaa/US09\_NEW\_PUB.pep:\*
/cgn2\_6/ptodata/2/pubpaa/US09\_PUBCOMB.pep:\*
/cgn2\_6/ptodata/2/pubpaa/US10\_NEW\_PUB.pep:\*
/cgn2\_6/ptodata/2/pubpaa/US10\_NEW\_PUB.pep:\*
/cgn2\_6/ptodata/2/pubpaa/US60\_NEW\_PUB.pep:\*
/cgn2\_6/ptodata/2/pubpaa/US60\_NEW\_PUB.pep:\*

/pubpaa/PCTUS\_PUBCOMB.pep:

/cgn2\_6,

ptodata/2/pubpaa/US07\_PUBCOMB.pep: ptodata/2/pubpaa/US08\_NEW\_PUB.pep: ptodata/2/pubpaa/US08\_PUBCOMB.pep:

#### Sequence 17, Appl Sequence 17, Appl Sequence 1416, Ap Sequence 44137, A Sequence 129, Appl Sequence 37818, A Sequence 4, Appli Sequence 2, Appli Sequence 2, Appli Sequence 2, Appli Sequence 2, Appli Sequence 17, Appl Sequence 17, Appl Sequence 17, Appl Appli Appl Sequence 4, Appl. Sequence 4, Appl. Sequence 4, 8 Sequence 4, Description US-09-864-761-44137 US-09-925-301-1416 US-10-218-509-17 US-10-218-509-17 US-10-281-160-17 us-09-813-156-17 US-09-813-156-2 US-09-813-156-4 US-09-824-807-4 US-09-824-807-2 US-09-824-647-2 US-10-218-509-2 Query Match Length DB 100.0 100.0 100.0 100.0 100.0 73.9 Score Result Š

ö

Sequence 4, Application US/10218509 Publication No. US20030092661A1 GENERAL INFORMATION:

US-09-864-761-37818

US-10-218-509-4

145 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Sequence 448, App Sequence 448, App Sequence 448, App
110-133-128 -09-864-76 -10-000-1503 -10-000-1503 -10-000-1503 -10-000-1003 -10-0003	US-10-174-579-448 US-10-174-582-448 US-10-174-588-448
a H a a a a a a a a a a a a a a a a a a	9
38 132 197 197 197 197 197 197 197 197 197 197	197 197 197
20202020202020202020202020202020202020	52.2 52.2 52.2
<b>୰୰୰୰୰୰୰୰୰୰୰୰୰</b> ᲝᲝᲝᲝᲝᲝᲝᲝᲝᲝᲝᲝᲝᲝᲝᲝᲝᲝ	8 9 9 8 9 9
22222222222222222222222222222222222222	4 4 4 5 5

## ALIGNMENTS

```
Sequence 4, Application US/09824647
; Sequence 4, Application US20020183270A1
; Publication No. US20020183270A1
; GENERAL INFORMATION:
APPLICANT: Serrect.
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
: TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
: TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
: CURRENT PELLING DATE: 2001-04-04
; PRIOR FILING DATE: EARLIER FILING DATE: 1998-08-17
; PRIOR FILING DATE: EARLIER FILING DATE: 1998-08-17
; PRIOR FILING DATE: EARLIER FILING DATE: 1997-05-23
; NUMBER OF SED ID NOS: 17
; SOFTWARE: Patentin Ver. 2.0
; SED ID NO 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COTITION: (1)...(12)
COTHER INFORMATION: Internal peptide of mouse GP88 used to raise the OTHER INFORMATION: antisera against the GP88 used in the COTHER INFORMATION: immunoaffinity step.

US-09-824-647-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100.0%; Score 69; DB 9; Length 12
100.0%; Pred. No. 4e-05;
Live 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ouery Match 100.
Best Local Similarity 100.
Matches 12; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 PDAKTOCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: PRT
ORGANISM: mouse granulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME/KEY: PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             음
```

```
APPLICANT: Serrero, Ginette
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE REFERENCE: 29996.488/P001-A
CURRENT APPLICATION NUMBER: 08/991,862
PRIOR FILING DATE: 2001-04-04
PRIOR FILING DATE: 1997-12-16
PRIOR FILING DATE: 1997-05-23
NUMBER OF SEQ ID NOS: 17
SOFTWARE: Patentin Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LOCATION: (1)..(12) or internal peptide of mouse GP88 used to raise the OTHER INFORMATION: antisera against the GP88 used in the OTHER INFORMATION: immunoaffinity step.
                                                                   88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 100.0%; Score 69; DB 10; Length 12; 100.0%; Pred. No. 4e-05; 1ve 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                LOCATION: (1).,(12)
OTHER INFORMATION: Internal peptide of mouse GP88 used to OTHER INFORMATION: antisera against the GP88 used in the OTHER INFORMATION: immunoaffinity step.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100.0%; Score 69; DB 10;
100.0%; Pred. No. 4e-05;
ive 0; Mismatches 0;
                                   APPLICANT: Serrero, Ginette
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTI
FILE REFERENCE: 2996.488/P001-A
CURRENT APPLICATION NUMBER: US/09/813,156
CURRENT FILING DATE: 2001-03-21
PRIOR APPLICATION NUMBER: 08/991,862
PRIOR FILING DATE: 1997-12-16
PRIOR FILING DATE: 1997-05-23
NUMBER OF SEQ.ID NOS: 17
SOFTWARE: Patentin Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 4, Application US/09824807 Patent No. US20020094966Al GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-824-647-2
; Sequence 2, Application US/09824647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity 100.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 100.
Best Local Similarity 100.
Matches 12; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 PDAKTQCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 PDAKTQCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 PDAKTQCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 PDAKTQCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM: mouse granulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM: mouse granulin
                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY: PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME/KEY: PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JS-09-813-156-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-824-807-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
APPLICANT: Serrero, Ginette
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE REPREBRENCE: 29996.488 F001-A
CURRENT APPLICATION NUMBER: 08/20/218,509
CURRENT FILING DATE: 2002-08-15
FRIOR APLICATION NUMBER: 08/991,862
FRIOR FILING DATE: 1998-08-17
FRIOR FILING DATE: 1998-08-17
FRIOR PILING DATE: 1998-08-17
FRIOR PILING DATE: 1997-05-23
NUMBER OF SEQ ID NOS: 17
SOFTWARE: PATENTIN Ver. 2.0
SOFTWARE: PATENTIN VER. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Serrero, Ginette
TITLE OF INVENTION: 88 RDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE REFERENCE: 29996.488/PP001-A
CURRENT APPLICATION NUMBER: US/10/281,160
CURRENT FILING DATE: 1002-10-28
PRIOR APPLICATION NUMBER: US/08/991,862
PRIOR FILING DATE: 1998-08-17
                                                                                                                                                                                                                                                                                                                                                                                                                          LOCATION: (1)...(12)
OTHER INFORMATION: Internal peptide of mouse GP88 used to raise the OTHER INFORMATION: antisera against the GP88 used in the OTHER INFORMATION: immunoaffinity step.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LOCATION: (1)..(12)
OTHER INFORMATION: Internal peptide of mouse GP88 used to raise the OTHER INFORMATION: antisera against the GP88 used in the OTHER INFORMATION: immunoaffinity step.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 69; DB 9; Length 12;
Pred. No. 4e-05;
0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100.0%; Score 69; DB 9; Length 12
100.0%; Pred. No. 4e-05;
ive 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%; Score 69; 100.0%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR APPLICATION NUMBER: 09/863,862
PRIOR FILLING DATE: 1997-05-23
NUMBER OF SEQ ID NOS: 17
SOFTWARE: PATENTIN VET. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 4, Application US/10281160 Publication No. US20030108950A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; Sequence 4, Application US/09813156
; Patent No. US20020061859A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity 100.
Matches 12; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  12; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PDAKTQCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 PDAKTQCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PDAKTQCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 PDAKTQCPDDST 12
                                                                                                                                                                                                                                                                                                                                                      ORGANISM: mouse granulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM: mouse granulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 4
US-09-813-156-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-10-218-509-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-10-281-160-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQ ID NO 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
```

셤

ð

ö

Gaps

ö

ö

ö

a

à

```
Patentin Ver. 2.0
NUMBER OF SEQ ID NOS: 17
SOFTWARE: Patentin Ver.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE: Pate
SEQ ID NO 2
LENGIH: 589
                                                                 589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-824-807-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                         TYPE: PRT
                                            SEQ ID NO 2
                                                                 LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  õ
                                                                                                                                                                                                                                                                        õ
                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                   APPLICANT: Serrero, Ginette.

TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS FILE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS FILE OF INVENTION: 29996.488/P001-A
CURRENT APPLICATION NUMBER: US/99/824,647
CURRENT FILING DATE: 2001-04-04
PRIOR FILING DATE: EARLIER APPLICATION NUMBER: 08/991,862
PRIOR FILING DATE: EARLIER FILING DATE: 1998-08-17
PRIOR FILING DATE: EARLIER FILING DATE: 1997-05-23
NUMBER: OF SEQ ID NOS: 17
SOFTWARE: PATCHILING DATE: 1997-05-23
LENGTHARE: PATCHILING DATE: 1997-05-23
LENGTH: 589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 2, Application US/10281160

Publication No. US20030108950A1

GENERAL INFORMATION:

APPLICANT: SETECTO, Ginette

TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE REFERENCE: 29956 488 FP001-A

CURRENT APPLICATION NUMBER: US/10/281,160

CURRENT FILING DATE: 2002-10-28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 2, Application US/10218509
Publication No. US20030092661A1
GENERAL INFORMATION:
APPLICAMT: Serrero, Ginette
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE APPLICATION NUMBER: US/10/218,509
CURRENT APPLICATION NUMBER: US/10/218,509
PRIOR APPLICATION NUMBER: 08/991,862
PRIOR APPLICATION NUMBER: 08/991,862
PRIOR APPLICATION NUMBER: 08/963,862
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 589;
                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                              Score 69; DB 9;
Pred. No. 0.0021;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 100.0%; Score 69; DB 9; Best Local Similarity 100.0%; Pred. No. 0.0021; Matches 12; Conservative 0; Mismatches 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION NUMBER: US/08/991,862
PRIOR FILING DATE: 1998-08-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      08/863,862
                                                                                                                                                                                                                                                                                                                                        ; TYPE: PRT
; ORGANISM: Mouse epithelin/granulin
US-09-824-647-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; ORGANISM: Mouse epithelin/granulin
US-10-218-509-2
                                                                                                                                                                                                                                                                                                                                                                                                                            100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR FILING DATE: 1997-05-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NUMBER OF SEQ ID NOS: 17
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 2
LENGTH: 589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1111111111111111200 PDAKTQCPDDST 219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 208 PDAKTQCPDDST 219
                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 100.

Best Local Similarity 100.

Matches 12; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 PDAKTQCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 PDAKTQCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-10-281-160-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 2, Application US/09824807
Patent No. US20020094966A1
RENEMATION:
APPLICANT: Serrero, Ginette
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE REFERENCE: 29996.488/P001-A
CURRENT APPLICATION NUMBER: 08/09/824,807
CURRENT FILING DATE: 2001-04-04
PRIOR APPLICATION NUMBER: 08/991,862
                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Serrero, Ginette
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE REFERENCE: 29996.488/POOL-A
CURRENT APPLICATION NUMBER: US/09/813,156
CURRENT FILING DATE: 2001-03-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                          ö
                                            Length 589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0; Indels
                                                              Query Match , 100.0%; Score 69; DB 9; L Best Local Similarity 100.0%; Pred. No. 0.0021; Matches 12; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              100.0%; Score 69; DB 10;
100.0%; Pred. No. 0.0021;
iive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100.0%; Score 69; DB 10;
100.0%; Pred. No. 0.0021;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR FILING DATE: 1997-12-16
PRIOR APPLICATION NUMBER: 08/863,862
PRIOR FILING DATE: 1997-05-23
NUMBER OF SEQ ID NOS: 17
SOFTWARE: PatentIN Ver: 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION NUMBER: 08/863,862 PRIOR FILING DATE: 1997-05-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION NUMBER: 08/991,862
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM: Mouse epithelin/granulin
US-09-813-156-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM: Mouse epithelin/granulin US-09-824-807-2
ORGANISM: Mouse epithelin/granulin US-10-281-160-2
                                                                                                                                                                                                                                                                                                               Sequence 2, Application US/09813156 Patent No. US20020061859A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQ ID NOS: 17
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 2
LENGTH: 589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               208 PDAKTQCPDDST 219
                                                                                                                                                                                  208 PDAKTQCPDDST 219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity 100.
Matches 12; Conservative
                                                                                                                                                        1 PDAKTQCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 PDAKTQCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity
Matches 12; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR FILING DATE:
                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION
```

Gaps

ò a

```
Sequence 17, Application US/09813156
Patent No. US20020061859A1
GENERAL INFORMATION:
APPLICANT: SETTERO, GINETTE
APPLICANT: SETTERO, GINETTE
TITLE OF INVERTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE REFERENCE: 29996.488/P001-A
CURRENT APPLICATION NUMBER: US/09/813,156
CURRENT FILING DATE: 1997-12-16
PRIOR APPLICATION NUMBER: 08/991,862
PRIOR FILING DATE: 1997-12-16
PRIOR FILING DATE: 1997-05-23
NUMBER OF SEQ ID NOS: 17
CORMINAND: DATE: 1997-05-23
NUMBER OF SEQ ID NOS: 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 17, Application US/09824807
Patent No. US20020094966A1
GENERAL INFORMATION:
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE REPERENCE: 29996.488/P001-A
CURRENT APPLICATION NUMBER: US/09/824,807
CURRENT FILING DATE: 2001-04-04
APPLICANT: Serrero, Ginette
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE REFERENCE: 29996.488/P001-A
CURRENT APPLICATION NUMBER: US/10/281,160
CURRENT FILING DATE: 2002-10-28
PRIOR APPLICATION NUMBER: US/08/991,862
PRIOR FILING DATE: 1998-08-17
PRIOR APPLICATION NUMBER: 08/863,862
PRIOR FILING DATE: 1997-05-23
                                                                                                                                                                                                                                                                                                                                                                                                                          ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 593;
                                                                                                                                                                                                                                                                                                                                                                         Length 593;
                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 10;
                                                                                                                                                                                                                                                                                                                                                                            Score 51; DB 9;
Pred. No. 1.8;
3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 51; DB Pred. No. 1.8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRIOR APPLICATION NUMBER: 08/991,862
PRIOR FILING DATE: 1997-12-16
PRIOR APPLICATION NUMBER: 08/991,862
PRIOR PLING DATE: 1997-12-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRIOR APPLICATION NUMBER: 08/863,862 PRIOR FILING DATE: 1997-05-23 NUMBER OF SEQ ID NOS: 17 SOFTWARE: PatentIn Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      73.98;
66.78;
                                                                                                                                                                                                                                                                                                                                                                              73.98;
66.78;
                                                                                                                                                                                                 NUMBER OF SEQ ID NOS: 17
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 17
LENGTH: 593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   209 PDARSRCPDGST 220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         209 PDARSRCPDGST 220
                                                                                                                                                                                                                                                                                                                                                                              Query Match 73.9
Best Local Similarity 66.7
Matches 8; Conservative
                                                                                                                                                                                                                                                                                         ; TYPE: PRT
; ORGANISM: Human GP88 CDNA
US-10-281-160-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; ORGANISM: Human GP88 cDNA US-09-813-156-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 PDAKTQCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 PDAKTOCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-824-807-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-813-156-17
                                                                                                                                                                                                                                                                    LENGIH: 593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                 Sequence 17, Application US/09824647

Publication No. US20020183270A1

GENERAL INFORMATION:
GENERAL INFORMATION:
GENERAL INFORMATION:
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE REFERENCE: 29996.488/P001-A

CURRENT APPLICATION NUMBER: US/09/824,647

CURRENT FILING DATE: 2001-04-04

PRIOR APPLICATION NUMBER: EARLIER PLILING DATE: 1998-08-17

PRIOR PLICATION NUMBER: EARLIER APPLICATION NUMBER: 08/963,862

PRIOR PLICATION DATE: EARLIER FILING DATE: 1997-05-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
APPLICANT: Serrero, Ginette
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE REFERENCE: 2996.488/P001-A
CURRENT APPLICATION NUMBER: US/10/218,509
PRIOR APPLICATION NUMBER: 08/991,862
PRIOR FILING DATE: 1998-08-17
PRIOR FILING DATE: 1999-06-17
PRIOR FILING DATE: 1999-06-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 51; DB 9; Length 593;
Pred. No. 1.8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 51; DB 9;
Pred. No. 1.8;
3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 17, Application US/10281160 Publication No. US20030108950A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-10-218-509-17; Sequence 17, Application US/10218509; Publication No. US20030092661A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                73.98;
66.78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 73.9%;
Best Local Similarity 66.7%;
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQ ID NOS: 17
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 17
LENGTH: 593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQ ID NOS: 17
SOFTWARE: PatentIn Ver. 2.0
SEQ ID NO 17
LENGTH: 593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 111:::||| ||
209 PDARSRCPDGST 220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    111:::||| ||
209 PDARSRCPDGST 220
                                              208 PDAKTQCPDDST 219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 73.9
Best Local Similarity 66.7
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     : ORGANISM: Human GP88 CDNA
US-10-218-509-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 PDAKTOCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 PDAKTQCPDDST 12
                           1 PDAKTOCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; ORGANISM: Human GP88 cDNA
US-09-824-647-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-10-281-160-17
                                                                                                                                                          US-09-824-647-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 13
```

ò 셤 Š 8

ö

Gaps

```
us-09-824-647-4.rapb
```

; SEQ ID NO 17 ; LENGTH: 593 ; TYPE: PRT ; ORGANISM: Human GP88 CDNA US-09-824-807-17

0; Gaps Query Match
73.9%; Score 51; DB 10; Length 593;
Best Local Similarity 66.7%; Pred. No. 1.8;
Matches 8; Conservative 3; Mismatches 1; Indels

1 PDAKTQCPDDST 12 |||:::||| || 209 PDARSRCPDGST 220

g δ

Search completed: July 8, 2003, 16:31:40 Job time: 12.6923 secs

GenCore version 5.1.6 Copyright (c) 1993 - 2003 Compugen Ltd.

OM protein - protein search, using sw model

8, 2003, 16:19:45; Search time 12.1538 Seconds (without alignments) 94.918 Million cell updates/sec July Run on:

US-09-824-647-4 69 1 PDAKTQCPDDST 12

Title: Perfect score: Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

283224 seqs, 96134422 residues Searched:

Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

PIR\_73:\* Database :

pir3:\* pir4:\* pirl:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Description	epithelin/granulin	epithelin/granulin	acrogranin - guine	granulin precursor	protein T22H2.6 [1	hypothetical prote		periplasmic dipept	exo-beta-D-fructos	ribonuclease TRV (	hypothetical prote			a	iron-dependent rep	transcription regu	transcription regu	bile acid-inducibl	variant surface gl	peptidase M13 fami	hypothetical prote			hypothetical prote	probable wrky-type	myoblast determina	transcription regu	alpha-D-mannose-al	probable membrane
į																			-										
A.	C38128	B38128	148141	GYHU	E87929	T25138	T25137	AC3545	A49206	JX0197	T33366	T16381	Н97712	A46654	C84211	AG1436	AH1078	E69371	S18447	F87683	T28812	AH2701	T32698	T35736	C96691	A29636	A87388	H83985	AH0728
8	7	~	7	-	~	7	7	7	~	-	7	~	7	7	~	7	7	~	7	n	7	7	7	~	7	7	7	7	c
Length	589	583	591	593	318	345	358	206	1423	234	190	222	465	57	144	351	351	436	479	206	1283	127	169	186	249	318	340	381	427
Match	100.0	100.0	81.2	73.9	62.3	62.3	62.3	6.09	58.0	57.2	56.5	56.5	56.5	55.1	55.1	55.1	55.1	55.1	55.1	55.1	55.1	53.6	53.6	23.6	53.6	53.6	53.6	53.6	53
Score	69	69	26	51	43	43	43	43	40	39.5	39	39	39.	38	38	38	. 38	38	38	38	38	37	37	37	37	37	37	37	37
NO.	H	7	m	4	'n	φ	7	80	6	10	11	12	13	14	15	16	17	18	19	20	21	22	. 23	24	25	26	27	28	20
	Score Match Length DB ID	Score Match Length DB ID 69 100.0 589 2 C38128	Score Match Length DB ID 69 100.0 589 2 C38128 69 100.0 589 2 B38128	Score Match Length DB ID Description 1 69 100.0 589 2 C38128 epithelin/gras 56 81.2 591 2 148141 acrogranin	Score Match Length DB ID Description  1 69 100.0 589 2 C38128 epithelin/gra  1 69 100.0 589 2 B38128 epithelin/gra  1 59 1 2 148141 acrogramin arrogramin gramulin prec	Score Match Length DB ID Description  1 69 100.0 589 2 538128 epithelin/gra  1 69 100.0 589 2 B38128 epithelin/gra  1 56 81.2 591 2 I48841 acrogranin -  51 73.9 593 1 GYHU granulin prec  51 62 100.0 589 2 B38128 epithelin/gra  52 81.2 591 2 I48841 protein 722828	Score Match Length DB ID Description   Construction   Construction	Score Match Length DB ID Description    69 100.0	Score Match Length DB ID Description  1	Score Match Length DB ID    1	Score Match Length DB ID Description    10	Score Match Length DB ID    10.00	Score Match Length DB ID    Score Match Length DB ID   Description	Score Match Length DB ID Description    10	Score Match Length DB ID    100.0	Score Match Length DB ID    100.0	Score Match Length DB ID Description    10	Score Match Length DB ID Description (1972)  1010	Score Match Length DB ID    100.0	Score Match Length DB ID    Score Match Length DB ID	Score Match Length DB ID Description (1972)  100.0 589 2 838128 epithelin/gra epitheli	Score Match Length DB ID  Score Match Length DB ID  S69 100.0 589 2 B38128 69 100.0 589 2 B38128 68 12 591 2 I48841 69 100.0 589 2 B38128 68 12 591 2 I48841 62 3 18 2 E87929 62 13 56 2 I25138 62 3 345 2 I25138 64 56 0 1823 2 A49206 6	Score Match Length DB ID    Score Match Length DB ID	Score Match Length DB ID  Score Match Length DB ID  SSORE Watch Length DB ID  SSORE WATCH LENGTH DB ID  SSORE B122 SB128 Epithelin/gra  SSORE B12 SB128 Epithelin/gra  SSORE B12 SB128 Epithelin/gra  SSORE SB128 Epithelin/gra  SSORE SB129 Epithelin/gra  Epithelin/gra  SSORE SB129 Epithelin/gra  Epithelin/gra  SSORE SB129 Epithelin/gra  Epithelin/gra  SSORE SB129 Epithelin/gra  Epithelin/gra  Epithelin/gra  SSORE SB129 Epithelin/gra  Epi	Score Match Length DB ID  Score Match Length DB ID  Score Match Length DB ID  SS 100.0	Score Match Length DB ID    100.0	Score Match Length DB ID  Score Match Length DB ID  SSORE Watch Length DB ID  SSORE WATCH LENGTH DB ID  SSORE B1228 EP1228 EP111 Accordant of the process of	Score Match Length DB ID  Score Match Length DB ID  Solution	Score Match Length DB ID  Score Match Length DB ID  S6 100.0

probable PTR2 fami	hypothetical prote	vesicle associated	hypothetical prote	probable transform	desmoyokin - human	tenascin-X precurs	hypothetical prote	hypothetical prote	exodeoxyribonuclea	myogenic factor 3	hypothetical prote	hypothetical prote	hypothetical prote	aminopeptidase (EC	serine/threonine k	
														•		
G84829	T18787	T14150	B86807	S26058	A45259	A40701	T32690	T33363	AG3260	S26827	T33365	T23460	F96704 '	C64243	AB2425	
7	7	7	7	~	~	-	~	~	7	7	7	~	ď	~	~	
583	601	1249	1441	2090	2960	3566	181	245	289	319	346	357	419	447	456	
53.6	53.6	53.6	53.6	53.6	53.6	53.6	52.2	52.2	52.2	52.2	52.2	52.2	. 52.2	52.2	52.2	
37	37	37	37	37	37	37	36	36	36	36	36	36	36	36	36	
_	_	~	<b></b>			ıo	_	m			_	~	m	***	10	

# ALIGNMENTS

```
A; Residues: 1-50, 'L', 252-253,'V', 255-349,'L',351-401,'SA',404-589 <RES>
A; Cross-references: GB:M86736; NID:g191766; PIDN:AAA37191.1; PID:g191767
R; Zhou, J.; Gao, G.; Crabb, J.W.; Serrero, G.
J. Biol. Chem. 268, 10863-10869, 1993
A;Title: Purification of an autocrine growth factor homologous with mouse epithe A; Reference number: A46705; MUID:93266526; PMID:8496151
epithelin/granulin precursor - mouse
N.A. Alternate names: acrogranin; Pc-cell-derived growth factor
C.Species: Mus musculus (house mouse)
C.Species: Mus musculus (house mouse)
C.Date: 10-Jul-1992 #sequence_revision 10-Jul-1992 #text_change 20-Aug-1999
C.Accession: CBA128; S35503; 149468; A46705
R.Plowman, G.D.; Green, J.M.; Neubauer, M.G.; Buckley, S.D.; McDonald, V.L.; Tod
J. Blol. Chem. 267, 13073-13078, 1992
A.7itle: The epithelin precursor encodes two proteins with opposing activities o
A; Reference number: A38128; MUID:92317004; PMID:1618805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A,Title: Exon/intron organization of the gene encoding the mouse epithelin/granu A,Reference number: $32503; MUID:93245991; PMID:8482392 A,Accession: $32503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Title: Acrogranin, an acrosomal cysteine-rich glycoprotein, is the precusor of A;Reference number: 148141; MUID:93228994; PMID:8471244
A;Accession: 149468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Molecule type: protein
A;Residues: 18-19,'X',21-25,'X',27-29,'XX',32;'XXX',119-127;152-154,'DXK',158-16
C;Superfamily: granulin
                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Molecule type: mRNA
A; Residues: 1-589 <PLO>
A; Cross-references: GB:X62321; NID:950851; PIDN:CAA44197.1; PID:950852
A; Cross-references: GB:X62321; NID:950851; PIDN:CAA44197.1; PID:950852
R:Baba, T.; Nemoto, H.; Watanabe, K.; Arai, Y.; Gerton, G.L.
FEBS Lett: 322, 89-94, 1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Molecule type: DNA
A;Residues: 18-349,'L',351-589 <BAB>
R;Baba, T.; HOff, H.B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       . Reprod. Dev. 34, 233-243, 1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Status: preliminary
```

208 PDAKTQCPDDST 219 1 PDAKTQCPDDST 12 . qq

δ

ö

Gaps

;

Length 589; 0; Indels

Ouery Match 100.0%; Score 69; DB 2; Best Local Similarity 100.0%; Pred. No. 0.0011; Matches 12; Conservative 0; Mismatches 0;

RESULT 2 B38128

```
Nalternate names: epithelin
Nyfontains: granulin A; granulin B; granulin C; granulin D; granulin E; granulin F;
Nyfontains: granulin A; granulin B; granulin C; granulin D; granulin E; granulin C; Species: Bomo sapiens (man)
C; Species: Bomo sapiens (man)
C; Date: 30-Sep-1992 #sequence_revision 03-May-1996 #text_change 08-Dec-2000
C; Accession: JC1284; A38128; A38118; A36598; B36698; D36698; D36698; A56873
B; Shandari, V.; Bateman, A.
Biochem. Biophys. Res. Commun. 188, 57-63, 1992
A; Title: Structuge and chromosomal location of the human granulin gene.
A; Title: Structuge and chromosomal location of the human granulin gene.
A; Reference number: JC1284; MUID: 93038704; PMID: 1417868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Plowman, G.D.; Green, J.M.; Neubauer, M.G.; Buckley, S.D.; McDonald, V.L.; Todarc, Balol, Chem. 267, 13073-13078, 1992.
Tille: The epithelin precursor encodes two proteins with opposing activities on effectence number: A38128; MUID:92317004; PMID:1618805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Cross-references: GB:X62320; NID:931192; PIDN:CAA44196.1; PID:931193; Bhandari, V.; Palfree, R.G.E.; Bateman, A. co. Natl. Acad. Sci. U.S.A. 89, 1715-1719, 1992; Title: Isolation and sequence of the granulin precursor cDNA from human bone mary Reference number: A38118; MUID:92179253; PMID:1542665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Molecule type: mRNA Residues: 1-406, R/, 408-433, G', 435-459, Q', 461-546, A', 548-566, R', is Residues: 1-406, R', 408-433, G', 435-453, G', 455-459, Q', 461-546, A', 548-566, R', is Cross references: GB:M75161; NID:9183613 in reference JC1284 is sequence has been revised in reference JC1284 is Relcourt, D.; Bennett, H.; Lazure, C.; Solomon, S. lochem. Blophys. Res. Commun. 173, 1161-1168, 1990 in the standins, a novel class of peptide from leukocytes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Map position: 17pter-17gter
A;Introns: 46/3; 88/3; 117/1; 154/3; 200/1; 236/3; 279/1; 311/3; 393/3; 471/3; 548/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Title: Characterisation of UGP and its relationship with beta-core fragment. Reference number: A56873; MUID:93229246; PMID:8471426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              granulin C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Note: this protein was purified and characterized as granulin Accession: B36698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Kardana, A.; Bagshawe, K.D.; Coles, B.; Read, D.; Taylor, M. r. J. Cancer 67, 686-692, 1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Note: sequence extracted from NCBI backbone (NCBIP:129524)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Molecule type: protein
Residues: 206-218, Hr, 220-233 <BA2>
Note: this protein was purified and characterized as
Accession: C36698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Molecule type: protein
Residues: 364-367,/X',369-385,'H',387-396 <BA3>
Note: this protein was purified and characterized as
Accession: D36698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A:Molecule type: protein
A:Residues: 281-283,'X',285-289,'S',291-295 <KAR>
A:Experimental source: urine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Molecule type: protein
Residues: 442-446,'XDTSS',456-458,'DG' <BA4>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A,Gene: GDB:GRN
A,Cross-references: GDB:136006; OMIM:138945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C; Superfamily: granulin
C; Keywords: glycoprotein; tandem repeat
                                                                                                                                                                                     - human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Molecule type: protein
Residues: 281-336 <BAT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Residues: 1-593 <BHA>
R; Plowman, G.D.; Green,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Residues: 1-593 <PLO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Accession: A38128 .. Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Molecule type: mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Accession: A56873
epithelin/granulin precursor - rat
C:Species: Rattus norvegicus (Norvay rat)
C;Species: Rattus norvegicus (Norvay rat)
C;Species: Rattus norvegicus (Norvay rat)
C;Date: 10-Jul-1992 #sequence_revision 10-Jul-1992 #text_change 20-Aug-1999
C;Accession: B38128; A36199; B36199; B361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                acrogranin - guinea pig (fragment)
c;Species: Cavia porcellus (guinea pig)
c;Species: Cavia porcellus (guinea pig)
c;Accession: 148141
c;Accession: 148141
c;Accession: 148141
d;Ababa, T.; Hoff, H.B.
Nol. Reprod. Dev. 34, 233-243, 1993
A;Title: Acrogranin, an acrosomal cysteine-rich glycoprotein, is the precusor of the grd A;Reference number: 148141
A;Reference number: 148141
A;Reference number: 148141
A;Retus: preliminary: translated from GB/EMBL/DDBJ
A;Residues: 1-591 cRBS
A;Residues: 1-591 cRBS
A;Residues: 1-591 cRBS
A;Cross-references: GB:M86735; NID:g191234; PIDN:AAA37030.1; PID:g191235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Title: The complementary deoxyribonucleic acid sequence, tissue distribution, and cell Reference number: 153272; MUID:94062640; PMID:8243292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Residues: 1-200,'S',203-388,'M',390-589 <RES>
:Cross-references: GB:M97750; NID:9204223; PIDN:AAA16903.1; PID:9204224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 2; Length 589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 591;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100.0%; Score 69; DB 2; Length 50
100.0%; Pred. No. 0.0011;
""" """ "" "" indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                'SB',310-324,'T',326,'X',328,'Q' <BAT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Status: preliminary; translated from GB/EMBL/DDBJ Molecule type: mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 56; DB 2;
Pred. No. 0.15;
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Molecule type: protein
Residues: 279-307,'8B',310-324,'T',32
Bhandari, V.; Giaid, A.; Bateman, A.
docrinology 133, 2682-2689, 1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         81.2%;
66.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11111111111
208 PDAKTQCPDDST 219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 81.2
Best Local Similarity 66.7
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 PDAKTOCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Residues: 279-307, 588, 188, R; Rhandari, V.; Giaid, A. Endocrinology 133, 268-20, A; Title: The complementary, Accession: 153272, A; Status: preliminary; tr. A; Molecule type: mRNA A; Residues: 1-200, Sc., 203 A; Cross-references: GB:M9 C; Superfamily; granulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Local Similarity
Matches 12; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
```

F;18-593/Product: granulin #status predicted <MAT> F;18-593/Product: progranulin #status predicted <PRO>

11:::|||||:| 209 PDSRSOCPDDIT 220

1 PDAKTQCPDDST 12

\$ 6 6

/Domain: signal sequence #status predicted

```
R; DelVecchio, V.G.; Kapatral, V.; Redkar, R.J.; Patra, G.; Mujer, C.; Los, T.; I.; Mazur, M.; Goltsman, E.; Selkov, E.; Elzer, P.H.; Hagius, S.; O'Callaghan, D. Proc. Natl. Acad. Sci. U. S.A. 99, 443-448, 2002
A; Ittle: The genome sequence of the facultative intracellular pathogen Brucella A; Reference number: AD3252; PMID:11756688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          periplasmic dipeptide transport protein precursor BMEII0284 [Imported] - Brucella
                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Cross-references: EMBL:281595; PIDN:CAB54304.1; GSPDB:GN00019; CESP:T22H2.6a A;Experimental source: clone T22H2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Cross-references: GB:AE008918; PIDN:AAL53526.1; PID:g17984432; GSPDB:GN00191
A;Experimental source: strain 16M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       C;Species: Streptococcus mutans
C;Date: 19-Dec-1993 #sequence_revision 18-Nov-1994 #text_change 21-Jul-2000
C;Accession: A49206
C;Burne, R.A.; Penders, J.E.
Infect. Immun. 60, 4621-4632, 1992
A;Title: Characterization of the Streptococcus mutans GS-5 fruA gene encoding
                                                                                                                                                                                         C;Species: Caenorhabditis elegans
C;Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 15-Oct-1999
C;Accession: T25137
R;Lennard, N.
submitted to the EMBL Data Library, November 1996
A;Reference number: 219985
A;Reference T25137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C;Species: Brucella melitensis
C;Date: 01-Feb-2002 #sequence_revision 01-Feb-2002 #text_change 01-Feb-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 506;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 358;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels

    Caenorhabditis elegans

                                                                                                                                                                                                                                                                                                                                                                     A; Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 43; DB 7
Pred. No. 13;
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 42; DB 3
Pred. No. 25;
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     exo-beta-D-fructosidase - Streptococcus mutans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    60.9%;
58.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    62.3%;
63.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 | |:||| :|
143 PIASTECPDPAT 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 62.3
Best Local Similarity 63.6
Matches 7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 60.5
Best Local Similarity 58.3
Matches 7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Map position: 1
A; Introns: 93/3; 232/3; 314/3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 PDAKTQCPDDST 12
                                                                                                                                                                    hypothetical protein T22H2.6a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99 DAETECSDDET 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2 DAKTQCPDDST 12
2 DAKTQCPDDST
                                                                                                                                                                                                                                                                                                                                                                                               A; Molecule type: DNA
A; Residues: 1-358 <WIL>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -506 <KUR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C; Accession: AC3545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Accession: AC3545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Gene: BMEII0284
A;Map position: II
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Residues: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A49206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δŏ
                                           qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A Title: Genome sequence of the nematode C. elegans: a platform for investigating biolog K. Reference number: A/5000; MUID:99066613; PMID:981916 A. Note: see Websites genome wustl.edu/gsc/C_elegans/ and www_sanger.ac.uk/Projects/C_ele A. Note: published errata appeared in Science 283, 35, 1999; Science 283, 2103, 1999; and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Cross-references: GB: chr_I; PIDN: CAB04752.1; PID: 93880056; GSPDB: GN00019; CESP: T22H2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Cross-references: EMBL:281595; PIDN:CAB54305.1; GSPDB:GN00019; CESP:T22H2.6b
A;Experimental source: clone T22H2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          C.Species: Caenorhabditis elegans
C.Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 15-Oct-1999
C.Accession: T25138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  protein T22H2.6 [imported] - Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Date: 10-May-2001 #sequence_revision 10-May-2001 #text_change 10-May-2001
C;Accession: E87929
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                           F;123-179/Product: granulin F #status predicted <GRF>
F;206-261/Product: granulin B #status experimental <GRB>
F;208-336/Product: granulin A #status experimental <GRA>
F;364-417/Product: granulin C #status experimental <GRC>
F;442-496/Product: granulin D #status predicted <GRD>
F;318-573/Product: granulin E #status predicted <GRE>
F;318-573/Product: granulin E #status predicted <GRE>
F;368/Binding site: carbohydrate (Asn) (covalent) #status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ;
                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                    Score 51; DB 1; Length 593;
pred. No. 0.97;
3; Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 2; Length 318;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 345;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ypothetical protein T22H2.6b - Caenorhabditis elegans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2;
#status experimental 
status predicted <GRG>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: DNA
A;Residues: 1-345 <WIL>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 43; DB 2;
Pred. No. 12;
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       R;anonymous, The C. elegans Sequencing Consortium. Science 282, 2012-2018, 1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      submitted to the EMBL Data Library, November 1996
A;Reference number: Z19985
A;Accession: T25138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 43;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        62.3%;
ilarity 63.6%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            62.3%;
63.6%;
                                                                                                                                                                                                                                          Query Match 73.9%;
Best Local Similarity 66.7%;
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                     209 PDARSRCPDGST 220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Gene: CESP:T22H2.6b
A;Map position: 1
A;Introns: 93/3; 232/3; 314/3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 62.3
Best Local Similarity 63.6
Matches 7; Conservative
                                                                                                                                                                                                                                                                                                                                              1 PDAKTQCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ||:|:|| || |
|DAETECSDDET 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2 DAKTOCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
Matches 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -318 <STO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Status: preliminary
A; Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Accession: E87929
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Map position: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Gene: T22H2.6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Residues:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð.
                                                                                                                                                                                                                                                                                                                                              ò
```

ě

```
A; Experimental source: spleen and head kidney
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         56.5%;
66.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         101 PISTIKCPDLST 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 PDAKTOCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          291 AKTSCPEDA 299
                                                                                                    ypothetical protein F47B7.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3 AKTOCPDDS 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              growth modulatory factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
Matches 6; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Status: preliminary
A;Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Accession: H97712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Accession:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         C;Species: Trichoderma viride
C;Species: Trichoderma viride
C;Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 10-Sep-1999
C;Accession: JX0197
R;Inada, Y:; Watanabe, H.; Ohdi, K.; Irie, M.
J; Blochem. 110, 896-904, 1991
J; Blochem. 110, 896-904, 1991
J; Blochem. 110, 896-904, 1991
J; Richem. 110, 896-904, 1991
J; Richem. 110, 896-904, 1991
J; Reference number: JX0197; WUID:92176163; PMID:1794979
A;Reference number: JX0197
A;Residues: 1-234 cINA>
C;Superfamily: Enterobacter ribonuclease
C;Seywords: glycoprotein; hydrolase
C;Reywords: glycoprotein; hydrolase
F;15/Binding site: carbohydrate (Asn) (covalent) #status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Cispecies: caenorhabditis elegans
Cispecies: caenorhabditis elegans
Cispecies: 29-oct-1999 #text_change 20-Jun-2000
Cistactung, S.; Scheet, P.
Ricattung, S.; Scheet, P.
Submitted to the EMBL Data Library, July 1998
A; Description: The sequence of C. elegans cosmid F16G10.
A; Reference number: 221329
A; Reference number: 221329
A; Recession: T33366
A; Status: preliminary; translated from GB/EMBL/DDBJ
A; Molecule type: DNA
A; Residues: 1-190 <GAT>
A; Residues: 1-190 <GAT>
A; Residues: 1-190 <GAT>
A; Residues: Latin Bristol N2; clone F16G10
C; Genetics:
                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           pothetical protein F16G10.1 - Caenorhabditis elegans
Species: Caenorhabditis elegans
Date: 29-Oct-1999 #sequence_revision 29-Oct-1999 #text_change 20-Jun-2000
A; Reference number: A49206; MUID:93014178; PMID:1398976
A; Contents: GS-5
A; Accession: A49206
A; Status: preliminary
A; Molecule type: nucleic acid
A; Residues: 1-1423 AGRA-
A; Cross-references: GB:L03358; NID:94733888; PIDN:AAA26889.1; PID:9153634
A; Note: sequence extracted from NCBI backbone (NCBIN:116439, NCBIP:116440)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Map position: 2
A;Introns: 61/3; 84/1; 127/3
C;Superfamily: Caenorhabditis elegans hypothetical protein F16G10.4
                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 1; Length 234;
                                                                                                                                                                                                              Score 40; DB 2; Length 1423;
Pred. No. 1.4e+02;
1; Mismatches 2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 190;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ribonuclease TRV (EC 3.1.27.-) - fungus (Trichoderma viride)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 39.5; DB Pred. No. 32; 1; Mismatches
                                                                                                                                                                                                                                                              1; Mismatches
                                                                                                                                                                                                                 58.0%;
66.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 57.2%;
Best Local Similarity 72.7%;
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 56.5
Best Local Similarity 58.3
Matches 7; Conservative
                                                                                                                                                                                                                                                              6; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       11 ||: ||||
217 PDGAKSTCPDD 227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 PDAKTQCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | : |:||| ||
PISTIKCPDLST 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 PD-AKTQCPDD 10
                                                                                                                                                                                                                                                                                                                                      || |:|||
619 PDLHTECPD 627
                                                                                                                                                                                                                                                                                                            1 PDAKTOCPD 9
                                                                                                                                                                                                                 Query Match
Best Local Similarity
Matches 6; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Genetics:
Gene: CESP:F16G10.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                hypothetical
                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 10
JX0197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          å
                                                                                                                                                                                                                                                                                                            õ
                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
```

```
A;Gene: pntB
C;Superfamily: NAD(P)+ transhydrogenase (B-specific) beta chain; NAD(P)+ transhydro
                                                                                                                                                                                                                                                                                                                      A'Molecule type: 'DNA
A'Residues: 1-222 <LEI>
A'Cross-references: EMBL:U39646; NID:g1049351; PID:g1049353; PIDN:AAA80368.1; CESP:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         C; Species: Cyprinus carpió (common carp)
C; Date: 21-Sep-1993 #sequence_revision 18-Nov-1994 #text_change 10-Nov-1995
C; Accession: A46654; A40180
R; Belcourt, D.R.; Lazure, C.; Bennett, H.P.
A; Biol. Chem. 268, 9230-9237, 1993
A; Title: Isolation and primary structure of the three major forms of granulin-like A; Reference number: A46654; MUID:93252781; PMID:8486624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C;Accession: H97712
R;Ogata, H.; Audic, S.; Renesto-Audiffren, P.; Fournier, P.E.; Barbe, V.; Samson, Science 293, 2093, 2098, 2001
A;Title: Mechanisms of Evolution in Rickettsia conoril and Rickettsia prowazekli. A;Reference number: A97700; MUID:21442074; PMID:11557893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A:Residues: 1.465 <KUR>
A:Cross-references: GB:AE006914; PIDN:AAL02642.1; PID:g15619144; GSPDB:GN00173
                                                      C.Date: 20-Sep-1999 #sequence_revision 20-Sep-1999 #text_change 20-Jun-2000 C.Accession: T16381 R.Leimbach, D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            hypothetical protein pntB [imported] - Rickettsla conorii (strain Malish 7)
C;Species: Rickettsla conorii
C;Date: 30-Sep-2001 #sequence_revision 30-Sep-2001 #text_change 22-Oct-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Gene: CESP:F47B7,4
A;Introns: 81/3; 97/1; 116/1; 163/3; 212/1
C;Superfamily: Caenorhabditis elegans hypothetical protein F16G10.4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 222;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 465;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                        submitted to the EMBL Data Library, October 1995
A;Description: The sequence of C. elegans cosmid F47B7
A;Reference number: 218504
A;Accession: T16381
- Caenorhabditis elegans
                                                                                                                                                                                                                                                                                        Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     granulin-1 - common carp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 39; DB 2
Pred. No. 72;
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB
37;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 56.5%; Score 39; DB Best Local Similarity 58.3%; Pred. No. 37; Matches 7; Conservative 2; Mismatches
```

```
C; Accession: C84211
R; Ng, W.V.; Kennedy, S.P.; Mahalras, G.G.; Berquist, B.; Pan, M.; Shukla, H.D.; Lasky, S; Leithauser, B.; Keller, K.; Cruz, R.; Danson, M.J.; Hough, D.W.; Maddocks, D.G.; Jable Jung, K.H.; Alam, M.; Freitas, T.
Proc. Natl. Acad. Sci. U.S.A. 97, 12176-12181, 2000
A; Authors: Bou, S.; Daniels, C.J.; Dennis, P.P.; Omc., A.D.; Ebhardt, H.; Lowe, T.M.; Li A; Reference number: A84160; MUID:20504483; PMID:11016950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-144 <STO>
A;Cross-references: GB:AE004437; NID:g10580129; PIDN:AAG19055.1; GSPDB:GN00138
                                                                                                                                                                                                                                                                                                                                                                                                                         C; Date: 02-Feb-2001 #sequence_revision 02-Feb-2001 #text_change 02-Feb-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                     Gaps
                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .;
0
A;Note: sequence extracted from NCBI backbone (NCBIP:131314)
C;Comment: All twelve Cys residues are involved in disulfide bonds.
C;Keywords: disulfide bond; monomer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 38; DB 2; Length 144;
Pred. No. 36;
1; Mismatches 1; Indels
                                                                                               Score 38; DB 2; Length 57;
Pred. No. 16;
1; Mismatches 3; Indels
                                                                                                                                                                                                                                                                                                                                                                           1ron-dependent repressor [imported] - Halobacterlum sp. NRC-1
C; Species: Halobacterium sp. NRC-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 55.1%;
Best Local Similarity 75.0%;
Matches 6; Conservative
                                                                                                 55.1%;
63.6%;
                                                                                                 Query Match 55.1
Best Local Similarity 63.6
Matches 7; Conservative
                                                                                                                                                                                                                             5 DANTICPDGTT 15
                                                                                                                                                                                                   2 DAKTQCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | |:||||
116 DRKSQCPD 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2 DAKTQCPD 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Gene: troR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                  g
```

Search completed: July 8, 2003, 16:29:25 Job time : 15.1538 secs us-09-824-647-4.rsp

GenCore version 5.1.6 Copyright (c) 1993 - 2003 Compugen Ltd.

OM protein - protein search, using sw model

July 8, 2003, 16:16:30; Search time 5.84615 Seconds (Without alignments) 85.136 Million cell updates/sec Run on:

US-09-824-647-4 69 1 PDAKTQCPDDST 12

Title: Perfect score: Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

112892'seqs, 41476328 residues Searched:

112892 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

SwissProt\_40:\* Database : Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

### SUMMARIES

											•																							
	ption	r granulins	mus musculu	-	h granulins	_	streptococc	trichoderma	cyprinus ca	trypanosoma	•	cucumper mo	mus n	homo	homo	homo	mus m	homo	homod	sus scrofa				saccharomyc		_		saccharomyc		_	phanerochae	homo	homo sapien	saccharomyc
	Description	P23785	P28798	P28797	P28799	0920h0	003174	P24657	P81013	P26327	P04884	083270	P10085	P35658	999600	P22105	09j1c3	Q9p0m4	P15172	P49811	P47631	000548	000311	P38830	010197	P24014	P27862	P33750	09zca0	008675	P50622	099571	P49747	P25037
	1																							-										
	9																							٠							•			
		N_RAT	GRN_MOUSE	GRN_CAVPO	N_HUMAN	CDC7_MOUSE	FRUA_STRMU	RNTR_TRIVI	GRN1_CYPCA	VSI2_TRYBB	VGLG_VSVO	VIA_CMVII	MYOD_MOUSE	N214_HUMAN	AHNK_HUMAN	TENX_HUMAN	SELX_MOUSE	117C_HUMAN	MYOD_HUMAN	MYOD_PIG	AMPA_MYCGE	GUX1_CRYPA	CDC7_HUMAN	NDT8_YEAST		SLIT_DROME	YIGZ_ECOLI	- 1	Y866_RICPR	$\neg$	LIG6_PHACH		- 1	UBP1_YEAST
	8	GRN	GR	GR	GRN	8	FR	S	GR	ΛS	Š	7	¥	Z	Æ	Ħ	SE	I	¥	¥	₹	9	8	£	A.	SL	Υĭ	တ္တ	XΒ	PA	3	P2	ප	5
	8	7	-	-	Н	~	-	7	-	-	٦	٦	-	П	Н	Н	-	1	Н	-	-	7	_	-	Н	-	~	-	-	-	-	-	-	1
	Match Length	588	589	. 591	593	564	1423	234	. 57	479	511	993	318	2090	2960	4289	116	197	319	319	447	452	574	627	1121	1480	204	489	107	369	372	388	757	808
% Query	Match	100.0	100.0			59.4	58.0	57.2	55.1	55.1	55.1	55.1	53.6	53.6	53.6	53.6	52.2	52.2	52.2	52.2	52.2	52.2	52.2	52.2	52.2	52.2	51.4	51.4	50.7	50.7	50.7	50.7	20:7	50.7
	Score	69	69	26	51	41	40	39.8	38	38	38	38	37	37	37	37	36	36	36	36	36	36	36	36	36	36	35.5	ď.	32	32	32	35	35	32
Result	No.	7	7	m	4	'n	Q	7	œ	σ	10	11	12	13	14	15	16	17	18	19	50	21	22	23	. 24	25	56	27	28	. 29	30	31	32	33

P40848 schizosacch	P25992 drosophila	P01029 mus musculu	Q04592 mus musculu	P01412 ophiophagus	P19960 aipysurus l	P00238 scenedesmus	P17007 cyanophora	Q04307 saccharomyc	Q9km76 vibrio chol	P44101 haemophilus	P21090 vaccinia vi	
DHP1_SCHPO	YEMA_DROME	CO4_MOUSE	PCK5_MOUSE	TXW1_OPHHA	NXS4_AIPLA	FER_SCEOU	FER1_CYAPA	RPCZ_YEAST	NRDG_VIBCH	YA43_HAEIN	VC23_VACCC	
-	H	-	Н	-	-	Н	-	-	-	-	Н	
991	1002	1738	1877	9	81	96	98	110	155	166	244	
50.7	50.7	50.7	50.7	49.3	49.3	49.3	49.3	49.3	49.3	49.3	49.3	
35	35	35	35	34	34	34.	34	34	34	34	34	
34	35	36	37	38	39	40	41	42	43	44	45	

# ALIGNMENTS

<u>.</u>.

```
ö
                       use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to licenseelsb-sib.ch).
       restrictions on
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-DEC-1992 (Rel. 24, Created)
01-OCT-1994 (Rel. 30, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Granulins precursor (Acrogranin) [Contains: Granulin 1; Granulin 2;
Granulin 3; Granulin 4; Granulin 5; Granulin 6; Granulin 7].
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Plowman G.D., Green I.M., Neubauer M.G., Buckley S., McDonald V.L., Todaro G.I., Shoyab M.;

"The epithelin precursor encodes two proteins with opposing activities on epithelial cell growth.";
J. Biol. Chem. 267:13073-13078(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100.0%; Score 69; DB 1; Length 588; 100.0%; Pred. No. 0.00043;
     There are no rest
ng as its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
MEDLINE-93245991; PubMed-8482392;
Baba T., Nemoto H., Watanabe K., Arai Y., Gerton G.L.;
"Exon/intron organization of the gene encoding the mouse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     113D434F7E099B31 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GRANDLIN 4.

GRANDLIN 5.

GRANDLIN 6.

GRANDLIN 7.

N-LINKED (GLCNAC...) (1)

N-LINKED (GLCNAC...) (2)

N-LINKED (GLCNAC...) (1)

S -> FP (IN REF. 2).

TR -> SB (IN REF. 4).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q -> T (IN REF. 4).
M -> I (IN REF. 2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            epithelin/granulin precursor (acrogranin).";
FEBS Lett. 322:89-94(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               589 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                     ACROGRANIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GRANULIN 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                            GRANULIN 1
                                                                                                                                                                                                                                                                                                                                                                                Signal.
  European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                          POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GRANULIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE-92317004; PubMed-1618805;
                                                                                                                                                                                                                                                                                                                                                    PS00799; GRANULINS; 7. Repeat; Glycoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ;
                                                                                                                                                                                                                                                                        InterPro; IPR000118; Granulin.
Pfam; PF00396; granulin; 7.
SMART; SM00277; GRAN; 7.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   63369 MW;
                                                                                                                                                  EMBL; M97750; AAA16903.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity 100.
Matches 12; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 PDAKTOCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STANDARD;
                                                                                                                                                                                                                                                                                                                                 GRAN; 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          413
492
567
38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              musculus (Mouse)
                                                                                                                                                                                                 PIR; A36199; A36199.
PIR; B36199; B36199.
PIR; E36698; E36698.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   588 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TISSUE-Kidney
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GRN_MOUSE
P28798;
                                                                                                                                                                                                                                                                                                                                                                                   Cytokine;
                                                                                                                                                                                                                                                                                                                            SMART; SM
PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CONFLICT
CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                       PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GRN_MOUSE

1D GRN_M
POP P2809
DT 01-DE
DT 01-DE
DT 16-OC
DE Granu
DE Granu
DE Granu
DE GRANU
OC BURATI
OC 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (see http://www.isb-sib.ch/announce/or send an email to license@isp-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
-i- FUNCTION: GRANULINS HAVE POSSIBLE CYTORINE-LIKE ACTIVITY. THEY MAY PLAST A ROLE IN INFLAMMATION, WOUND REPAIR, AND TISSUE REMODELING.
-i- TISSUE SPECIFICITY: UBIOLITOUS.
-i- PTM: GRANULINS ARE DISULFIDE BRIDGED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MOL. Reprod. Dev. 34:233-243(1993).
-!- FUNCTION: GRANULINS HAVE POSSIBLE CYTOKINE-LIKE ACTIVITY. THEY MAY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "Acrogranin, an acrosomal cysteine-rich glycoprotein, is the precursor of the growth-modulating peptides, granulins, and epithelins, and is expressed in somatic as well as male germ cells.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Cavia porcellus (Guinea pig).
Sukaryota: Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Hystricognathi; Caviidae; Cavia.
NCBI_TaxID=10141;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        . .) (POTENTIAL). . . (POTENTIAL). . . ) (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Baba T., Hoff H.B. III, Nemoto H., Lee H., Orth J., Aral Y.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-DEC-1992 (Rel. 24, Created)
01-DEC-1992 (Rel. 24, Last sequence update)
01-DEC-2001 (Rel. 40, Last annotation update)
Granulins precursor (Acrogrania) [Contains: Granulin 1; Grangrantin 3; Granulin 4; Granulin 5; Granulin 6; Granulin 7]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 69; DB 1; Length 589;
Pred. No. 0.00043;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -> R (IN REF. 2).
1DE8229C413CB787 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (GLCNAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (GLCNAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              591 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             [1]
SEQUENCE FROM N.A., AND SEQUENCE OF 4-21.
                                                                                                                                                                                                                                                                                                                                   POTENTIAL.
GRANULIN 1.
GRANULIN 2.
GRANULIN 3.
GRANULIN 4.
GRANULIN 4.
GRANULIN 6.
GRANULIN 6.
GRANULIN 7.
N-LINKED (G.
N-LINKED (G.
L -> R (IN)
                                                                                                                                                                                                                                                                                                                      Signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE-93228994; PubMed-8471244;
                                                                                                                                                                                                                                                                                                                      Glycoprotein;
                                                                                                                                                                                                                                                                                                  PROSITE; PS00799; GRANULINS; 7. Cytokine; Repeat; Glycoprotein:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                         MGD; MGI:95832; Grn.
InterPro; IPR000118; Granulin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   63458 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100.08;
                                                                                                                                                                                          EMBL; D16195; BAA03736.1; -. EMBL; M86736; AAA37191.1; -.
                                                                                                                                                                                                           EMBL; M86736; AAA37191.1; -. EMBL; X62321; CAA44197.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             100.0%;
                                                                                                                                                                                                                                                                     Pfam; PF00396; granulin; 7. SMART; SM0277; GRAN; 7.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       111111111111
208 PDAKTQCPDDST 219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 PDAKTQCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  589 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
Matches 12; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TISSUE-Testis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (Fragment).
GRN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GRN_CAVPO
P28797;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CONFLICT
                                                                                                                                                                                                                                                                                                                                                                  PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                  PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                               PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                             PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                          PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                           PEPTIDE
                                                                                                                                                                                                                                                                                                                                    SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gerton
                                                                                                                                                                                                                                                                                                                                                     CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GRN_CAVPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 3
 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
```

```
MEDLINE=92317004; PubMed=1618805;
                                                                                  TISSUE-Brain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Polymorphism
SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MIM; 138945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PEPTIDE
PEPTIDE
PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PEPTIDE
PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PEPTIDE
PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CHAIN
 This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its muse by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@lsb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                     GRN_HUMAN STANDARD; PRT; 593 AA.
P28799; P23781; P23782; P23784; Q9BWE7;
O1-NOV-1991 (Rel. 20, Created)
O1-DDC-1992 (Rel. 24, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Granulins precursor (Acrogranin) [Contains: Paragranulin; Granulin 1 (Granulin G); Granulin 2 (Granulin F); Granulin 3 (Granulin B);
Granulin 4 (Granulin A); Granulin 5 (Granulin C); Granulin 6 (Granulin C); Granulin 6 (Granulin C); Granulin 6 (Granulin C); Granulin C); Granulin C); Granulin C);
                                                                                                                                                                                                                                                                                                                                                            Gaps
 WOUND REPAIR, AND TISSUE REMODELING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bhandari V., Palfree R.G.E., Bateman A.; Isolation and sequence of the granulin precursor cDNA from human bone marrow reveals tandem cysteine-rich granulin domains."; Proc. Natl. Acad. Sci. U.S.A. 89:1715-1719(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Structure and chromosomal location of the human granulin gene."; lochem. Biophys. Res. Commun. 188:57-63(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi,
Mammalia; Eutheria; Primates; Catarrhini, Hominidae, Homo.
                                                                                                                                                                                                                                                                                                        .) (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                  Score 56; DB 1; Length 591;
Pred. No. 0.058;
4; Mismatches ·0; Indels
                                                                                                                                                                                                                                                                                                                 EE7C9FC8F21CB8A1 CRC64;
                                                                                                                                                                                                                                                                                            GRANULIN 7.
N-LINKED (GLCNAC.
PLAY A ROLE IN INFLAMMATION, WOUND RE
I- TISSUE SPECIFICITY: UBIQUITOUS.
I- PTM: GRANULINS ARE DISULFIDE BRIDGED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
                                                                                                                                                                                                                                                 GRANULIN 3.
                                                                                                                                                                                                                                                                       GRANULIN 5.
GRANULIN 6.
                                                                                                                                                                                                                              GRANULIN 1.
GRANULIN 2.
                                                                                                                                                                                                                    ACROGRANIN
                                                                                                                                                                                   Repeat; Signal; Glycoprotein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TISSUE-Bone marrow;
MEDLINE-92179253; PubMed=1542665;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REVISIONS, SEQUENCE FROM N.A. MEDLINE-93038704; Pubmed-1417868;
                                                                                                                           EMBL; M86735; AAA37030.1; -.
InterPro; IPR00118; Grauulin.
Pfam; PF00396; grauulin; 7.
SMART; SW00277; GRAN; 6.
PROSITE; PS00799; GRANULINS; 6.
                                                                                                                                                                                                                                                                                                                   62586 MW;
                                                                                                                                                                                                                                                                                                                                       81.2%;
                                                                                                                                                                                                                                                                                                                                                 66.78;
                                                                                                                                                                                                                                                                                                                                                                                              209 PDSRSQCPDDTT 220
                                                                                                                                                                                                                                                                                                                                                 Best_Local Similarity 66.7
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Shandari V., Bateman A.;
                                                                                                                                                                                                                                                                                                                                                                                1 PDAKTOCPDDST 12
                                                                                                                                                                                                                 591
798
7164
                                                                                                                                                                                                                                                                        2415
2494
2569
                                                                                                                                                                                                                                                     261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                 591 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                  439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=9606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        rissum-Kidney;
                                                                                                                                                                                  Cytokine; F
NON_TER
SIGNAL
                                                                                                                                                                                                                                                                                                                 SEQUENCE
                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                        CARBOHYD
                                                                                                                                                                                                                            PEPTIDE
PEPTIDE
                                                                                                                                                                                                                                                    PEPTIDE
                                                                                                                                                                                                                                                              PEPTIDE
                                                                                                                                                                                                                                                                       PEPTIDE
                                                                                                                                                                                                                                                                                  PEPTIDE
                                                                                                                                                                                                                                                                                            PEPTIDE
                                                                                                                                                                                                                   CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                               GRN_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 4
                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ď
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profilt institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bateman A., Belcourt D.R., Bennett H.P., Lazure C., Solomon S.;

"Granulins, a hovel class of peptide from leukocytes.";

"Granulins, a hovel class of peptide from leukocytes.";

Biochem. Biophys. Nes. Commun. 173:1161-1168(1990).

"C. -!- FUNCTION: GRANULINS HAVE POSSIBLE CYTOKINE-LIKE ACTIVITY. THEY MAY PLAY A ROLE IN INFLAMATION, WOUND REPAIR, AND TISSUE REMODELING.

"CELL LINE A431 IN CUITURE WHILE GRANULIN B ACTS AS AN ANTAGONIST CELL LINE A431 IN CUITURE WHILE GRANULIN B ACTS AS AN ANTAGONIST.

"O GRANULIN A, INHIBITING THE GROWTH.

"CITCHERNATIVE PRODUCTS: 2 isoforms; 1 (shown here) and 2; may be produced by alternative splicing.

"TISSUE SPECIFICITY: IN MYELOGENOUS LEUKENIC CELL LINES OF PROMOCYTIC, AND PROBRYTHROID LINESGE, IN FIRENDELASTS, AND VERY STRONGIY IN BEPITHELIAL CELL LINES. FRESENT FIRENDELASTS, AND VERY STRONGIY IN BEPITHELIAL CELL LINES. IN KIDNEY.
                                                                              "The epithelin precursor encodes two proteins with opposing activities
Plowman G.D., Green I.M., Neubauer M.G., Buckley S.D., McDonald V.L., Todaro G.J., Shoyab M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro; IPR000118; Granulin.
Pfam; PF00396; granulin; 7.
SMART; SMOG377; GRAN; 7.
PROSITE; PS00799; GRANULINS; 7.
Cytokine; Repeat; Glycoprotein; Signal; Alternative splicing;
                                                                                                                                                                                                                                                                                                                                                                                                                                        Strausberg R.; Submitted (JUL-2001) to the EMBL/GenBank, DDBJ databases
                                                                                                                                                                                                                                                                          Iu W., Glbbs R.A.;
Submitted (MAR-1998) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               وتك
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE OF 206-233; 281-336; 364-396 AND 442-447.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            N-LINKED (GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (GLCNAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PARAGRANULIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GRANULIN 5.
GRANULIN 6.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -!- PTM: GRANULINS ARE DISULFIDE BRIDGED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GRANULIN 4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACROGRANIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GRANULIN 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GRANULIN 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GRANULIN 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N-LINKED
N-LINKED
                                                                                                                                                                                                                                                                                                                                                                          (ISOFORMS 1 AND 2)
                                                                                                   on epithelial cell growth.";
J. Biol. Chem. 267:13073-13078(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; M75161; AAA58617.1; ALT_SEQ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TISSUE-Leukocyte;
MEDLINE-91097544; PubMed-2268320;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; X62120; CAA44196.1; -.
EMBL; AROSSO08; AACO359.1; -.
EMBL; BC000324; AARH00334.1; -.
EMBL; BC010577; AAH10577.1; -.
                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A. (ISOF
TISSUE-Cervix, and Lung;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2496
2573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Genew; HGNC:4601; GRN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PIR; A38118; GYHU.
PIR; D36698; D36698.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PIR; JC1284; JC1284
                                                                                                                                                                                                             SEQUENCE FROM N.A.
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Kim J., Sato N., Yamada M., Arai K., Masai H.;
"Growth requisation of the expression of mouse cDNA and gene encoding a serine/threonine kinase related to Saccharomyces cerevisiae CDC7 essential for GI/S transition. Structure, chromosomal localization, and expression of mouse gene for s. cerevisiae Cdc7-related kinase."; J. Biol. Chem. 273:23248-23257(1998).

- FUNCTION: SEDAS TO PHOSEPHORYLATE CRITICAL SUBSTRATES THAT REGULATE THE GI/S PHASE TRANSITION AND/OR DNA REPLICATION. CAN
                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SUBCELLUIAR LOCATION: Nuclear (By similarity).
ALTERNATIVE PRODUCTS: AT LEAST 2 ISOFORMS; 1 (SHOWN HERE) AND 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Craniata; Vertebrata; Euteleostomi;
Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ARE PRODUCED BY ALTERNATIVE SPLICING.
SIMILARITY: BELONGS TO THE SER/THR FAMILY OF PROTEIN KINASES.
CDC7 SUBFAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                CDC7_MOUSE STANDARD; PRT; 564 AA.
0920H0; 0922X7;
16-0CT-2001 (Rel. 40, Last sequence update)
16-0CT-2001 (Rel. 40, Last annotation update)
Cell division cycle 7-related protein kinase (EC 2.7.1.-) (CDC7-related kinase) (mucdc7).
N-LINKED (GLCNAC. .).
N-LINKED (GLCNAC. .) (POTENTIAL).
MISSING (IN ISOFORM 2).
                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                               Score 51; DB 1; Length 593;
Pred. No. 0.38;
3; Mismatches 1; Indels
                                                                                                                                                          4E402BDB16DE2819 CRC64;
                                                                                      /FTId=VAR_003445.
S -> H (IN REF. 6).
W -> H (IN REF. 6).
                                                                      ò
^
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOINED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOINED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOINED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOINED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOINED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PHOSPHORYLATES MCM2 AND MCM3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE-98389757; PubMed-9722556;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                          63473 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; AB019388; BAA34347.1; EMBL; AB019378; BAA34347.1; JG
                                                                                                                                                                                                  73.9%;
66.7%;
                                                                                                                                                                                                                                                                                                                    109 PDARSRCPDGST 220
                                                                                                                                                                                                                                                8; Conservative
                                                                                                                                                                                                                                                                                          1 PDAKTQCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BAA34347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mus musculus (Mouse).
                                                                                                                                  386
593 AA;
                                                                                                                                                                                                                           Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MGI:1309511;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID-10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AB019383;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDC7L1 OR CDC7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TISSUE-Liver
                                                                                                                                     CONFLICT
CARBOHYD
CARBOHYD
                                                                                                                                                                                                    Query Match
                                            VARSPLIC
                                                                                                             CONFLICT
                                                                 VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 5
CDC7_MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL;
EMBL;
EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    <u>+</u>.
STTTTTTS
                                                                                                                                                                                                                                                                                          οğ
                                                                                                                                                                                                                                                                                                                                  g
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This SWISS-PROT entry is copyright. It is produced through a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on it use by non-profit institutions as long as its content is in no we modified and this statement is not removed. Usage by and for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Burne R.A., Penders J.E.C.; "Characterization of the Streptococcus mutans GS-5 fruA gene encoding exo-beta-D-fructosidase.";
EXTRACELLULAR INVERTASE.
-!-CATALITIC ACTIVITY: Hydrolysis of terminal-non-reducing 2,1- and 2,6-linked beta-D-fructofuranose residues in fructans.
-!- SUBCELLULAR LOCATION: Attached to the cell wall peptidoglycan by an amide bond (Potential).
-!- INDUCTION: BY SUCRASE, FRUCTASE, FRUCTASE, FRUCTASE AND FRUCTOSE.
-!- SIMILARITY: BELONGS TO FAMILY 32 OF GLYCOSYL HYDROLASES.
                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Infect. Immun. 60:4621-4632(1992).
-1- FUNCTION: THIS PROPEIN IS A FRUCTANASE ENZYME WHICH DEGRADES
LEVANS AND INULINS TO FRUCTOSE AND ALSO CLEAVES SUCROSE INTO
GLUCOSE AND FRUCTOSE AND CAN THEREFORE FUNCTION AS AN
                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                      01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Fructan beta-fructosidase precursor (EC 3.2.1.80) (Exo-beta-D-
                                                                                                                                                                                                                              DB 1; Length 564;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bacteria; Firmicutes; Lactobacillales; Streptococcaceae; Streptococcus.
                                                                                                                                                                                                                                                               3; Mismatches
                                                                                                                                                                                                                                               Pred. No. 16;
                                                                                                                                                                                                                                    Score 41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         InterPro; IPR003343; Big_2.
InterPro; IPR001362; GH_32.
InterPro; IPR01899; Gram_pos_anchor.
Pfam; PF00251; Glyco_hydro_32; 1.
Pfam; PF02368; Big_2; 1.
IIGRFAMS; IIGR01167; LPXTG_anchor; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE-93014178; PubMed-1398976;
                                                                                                                                                                                                                                   59.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               fructosidase) (Fructanase)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; U78296; AAA26889.1;
                                                                                                                                                                                                                                                                                                           1: |:|| :|
373 PEVLTKCPDOTT 384
                                                                                                                                                                                                                                                               6; Conservative
                                                                                                                                                                                                                                                                                            1 PDAKTQCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                             STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Streptococcus mutans.
                                                                                                                                                                                                                                                  Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID-1309;
                                                                                                                                                                                                                                                                                                                                                                                                                      01-NOV-1997
01-NOV-1997
                                                                                                                                                                                                                                                                                                                                                                             FRUA_STRMU
ID FRUA_STRMU
AC Q03174;
                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                Matches
          g
                                                                                                                                                                                                                                                                                                                                                                                                          óλ
```

57 AA.

```
Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Actinopterygil; Neopterygil; Teleostel; Ostarlophysi; Cypriniformes;
Cyprindae; Cyprinus.
NCBI_TaxID=7962;
                                                                                                          (Rel. 35, Created)
(Rel. 35, Last sequence update)
(Rel. 35, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRT;
                                                                                     PRT;
                                                                                                                                                                                                                                                                                                                                                                               InterPro; IPR000118; Granulin.
Pfam; PF00396; granulin; 1.
SMART; SM00277; GRAN; 1.
                                                                                                                                                            Cyprinus carpio (Common carp).
                                                                                                                                                                                                                                                                                                                                                                                                                                  6289 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         55.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    63.68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity 63.6 nes 7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STANDARD;
               11 || || 1111
217 PDGAKSTCPDD 227
                                                                                     STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    || | | ||| :|
|DAATICPDGTT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2 DAKTQCPDDST 12
 1 PD-AKTQCPDD 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                   57 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VSG GENES.
                                                                                                        01-NOV-1997
01-NOV-1997
01-NOV-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Turner M.J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VSI2_TRYBB
P26327;
                                                                                                                                                Granulin 1.
                                                                                   GRN1_CYPCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        residues.
                                                                                                                                                                                                                                    SEQUENCE.
                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                         Cytokine
                                                                                                 P81013;
                                                             RESULT 8
GRN1_CYPCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VSI2_TRYBB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
                                                                                                 ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ï
                                                                                                                                                                                                            ö
                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE-92176163; PubMed-1794979;
MEDLINE-92176163; PubMed-1794979;
Indada Y., Watanabe H., Ohgi K., Irite M.;
Isolation, characterization, and primary structure of a base non-specific and adenylic acid preferential ribonuclease with higher specific activity from Trichoderma viride.";
J. Blochem. 110:895-904(1991).
PREFERENTIAL RIBONUCLEASE.
                        e; Cell wall; Peptidoglycan anchor; Signal.
POTENTIAL.

REMOUTA BETA-FRUCTOSIDASE.
REMOUVED BY SORTASE (POTENTIAL).
BY SIMILARITY
INVOLVED IN BINDING OF SUGARS WITH BETA-(2,6) LINKAGES OR BINDING OF MOLECULAR WEIGHT FRUCTANS (BY
                                                                                                                       SIMILARITY).
LPXTG SORTING SIGNAL (POTENTIAL).
MAIDE-LINKED TO CELL WALL (POTENTIAL).
MW; BE574715F4E72A8A CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -1- CATALYTIC ACTIVITY: Two-stage endonucleolytic cleavage to nucleoside 3'-phosphates and 3'-phosphaoligonucleotides with 2',3'-cyclic phosphate intermediates
-1- SIMILARITY: BELONGS TO THE RNASE T2 FAMILY.
                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                  01-MAR-1992 (Rel. 21, Created)
01-MAR-1992 (Rel. 21, Last sequence update)
15-JUN-2002 (Rel. 21, Last annotation update)
Ribonuclease Trv (EC 3.1.27.1) (RNase Trv).
Trichoderma viride.
Eukaryota; Fungi; Ascomycota; Pezizomycotina; Sordariomycetes; Hypocreales; mitosporic Hypocreales; Trichoderma.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 1; Length 234;
                                                                                                                                                                                    DB 1; Length 1423;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                            2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8B011DD65A3F909A CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       N-LINKED (GLCNAC. . .).
  GLYCOSYL_HYDROL_F32; FALSE_NEG. GRAM_POS_ANCHORING; FALSE_NEG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Hydrolase; Nuclease; Endonuclease; Glycoprotein.

DISGLEID

13

14

BY SIMILARITY.

BY SIMILARITY.

DISGLEID

13

125

BY SIMILARITY.

DISGLEID

67

117

BY SIMILARITY.

DISGLEID

189

224

BY SIMILARITY.

ACT_SITE

52

52

BY SIMILARITY.

ACT_SITE

110

110

BY SIMILARITY.

ACT_SITE

114

114

BY SIMILARITY.
                                                                                                                                                                                   Score 40; DB 1
Pred. No. 56;
1; Mismatches
                                                                                                                                                                                                                                                                                                                        234 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pred. No. 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 39.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         InterPro; IPR001568; RNase_T2.
PRDH; PF00445; Inbonuclease_T2; 1.
PROSITE; PS00530; RNASE_T2_1; 1.
PROSITE; PS00531; RNASE_T2_2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       15 N-75 N-25901 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      57.28;
72.78;
                                                                                                                                  1388 1392
1391 1391
1423 AA; 158668
                                                                                                                                                                                    58.0%;
66.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                        STANDARD;
PROSITE; PS00609; GLYCOS
PROSITE; PS50847; GRAM_I
Hydrolase; Glycosidase;
                                                 1391
1423
458
871
                                                                                                                                                                                                                                                  | | | |:|||
619 PDLHTECPD 627
                                                                                                                                                                                                                                   1 PDAKTQCPD 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PIR; JX0197; JX0197.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                234 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Local Similarity
Matches 8; Conserv
                                                                                                                                                                                              Best Local Similarity
Matches 6; Conserv
                                                                                                                                                                                                                                                                                                                      RNTR_TRIVI
P24657;
                                                 CHAIN
PROPEP
ACT_SITE
DOMAIN
                                                                                                                                                MOD_RES
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                     Query Match
                                      SIGNAL
                                                                                                                                                                                                                                                                                                          RNTR_TRIVI
                                                                                                                                     SITE
                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                    ò
```

```
Gaps
                                                                                                                                                                                                                                                                                                                                                               Trypanosoma brucei brucei.
Eukaryota; Euglenozoa; Kinetoplastida; Trypanosomatidae; Trypanosoma.
NCBI_TaxID=5702;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "Variant specific glycoprotein of Trypanosoma brucel consists of two domains each having an independently conserved pattern of cysteine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SUBCELLULAR LOCATION: Attached to the membrane by a GPI-anchor. A SOLUBLE FORM IS RELASED FROM RUPTURED CELLS BY THE ACTION OF A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 J. MOI. Biol. 221:823-835(1991).
-1- FUNCTION: VSG FORMS A COAT ON THE SURFACE OF THE PARASITE. THE
TYPANOSOME EVADES THE IMMONE RESPONSE OF THE HOST BY EXPRESSING
A SERIES OF ANTIGENICALLY DISTINCT VSGS PROM AN ESTIMATED 1000
                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRAIN-Isolate MIAG 202B;
MEDLINE-92046037; PubMed-1942032;
Carrington M., Miller N., Blum M.L., Roditi I., Wiley D.C.,
                                Score 38; DB 1; Length 57;
Pred. No. 5.6;
1; Mismatches 3; Indels
                                                                                                                                                                                                                                                                                             01-MAY-1992 (Rel. 22, Created)
01-MAY-1992 (Rel. 22, Last sequence update)
15-DEC-1998 (Rel. 37, Last annotation update)
Variant surface glycoprotein ILTAT 1.22 precursor (VSG).
E4A131B1288FE55A CRC64;
                                                                                                                                                                                                                                                          479 AA.
```

```
Cucumovirus
                                                                                                                                                                                                                             RESULT 11
V1A_CMVII
ID V1A_CMVII
AC Q83270;
  CARBOHYD
CARBOHYD
                                                                       SEQUENCE
                              VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 12
MYOD_MOUSE
    5777778
87777777
                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                         12555
1255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                        This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss institute of Bioinformatics and the EMEL outstation the European Bioinformatics institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profilt institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         91/YOPDTOTELL.";
J. VITOL. 54:374-382(1985).
I. VITOL. 54:374-382(1985).
I. VITOL. 54:374-382(1985).
I. VITOL. 54:374-382(1985).
I. SAUSTION: THIS PROTEIN FOR THE BINDING OF THE VIRUS TO SUSCEPTIBLE HOST CELLS AND FOR INDCING THE UPTAKE OF THE VIRUS BY THE CELL. THE INTERACTION BETWEEN THE INTERNAL COMPONENTS OF THE VIRION AND THE PORTION OF THE GLYCOPROTEIN EXPOSED ON THE CYTOPLASHIC FACE OF THE PLASMA MEMBRANE PROBABLY DIRECTS ENVELOPMENT AND
                                                                                                                                                                  Glycoprotein; Antigen; Trypanosomiasis; GPI-anchor; Membrane; Signal.
SIGNAL 1 12
                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                 VARIANT SURFACE GLYCOPROTEIN ILTAT 1.22
                                                                                                                                                                                                             HYDROPHOBIC, REMOVED DURING MATURATION.
N-LINKED (GLCNAC. .) (POTENTIAL).
N-LINKED (GLCNAC. .) (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.

MEDLINE-85185661; PubMed-2985803;
Gallione C.J., Rose J.K.;
Gallione C.J., Rose J.K.;
A single amino acid substitution in a hydrophobic domain causes temperature-sensitive cell-surface transport of a mutant viral
                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                  DB 1; Length 479;
                                                                                                                                                                                                                                                      GPI-ANCHOR (BY SIMILARITY).
FF7205FF0F58435A CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Vesicular stomatitis virus (strain Orsay).
Viruses; ssRNA negative-strand viruses; Mononegavirales;
Rhabdoviridae; Vesiculovirus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro; IPR001903; Rhabd_glycop.
Pfam; PF00974; Rhabd_glycop; 1.
Transmembrane; Envelope protein; Glycoprotein; Signal.
SIGNL 1 16
CHAIN 17 51 SPIKE GLYCOPROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SPIKE GLYCOPROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             13.AG-1987 (Rel. 05, Created)
13.AG-1987 (Rel. 05, Last sequence update)
01.JUL-1989 (Rel. 11, Last annotation update)
                                                                                                                                                                                                                                                                                                                             3; Mismatches
                                                                                                                                                                                                                                                                                               Score 38; DB
Pred. No. 42;
                                                                                                                                                                                                                                                                   51457 MW;
                                                                                                                                       EMBL; X56765; CAA40084.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Spike glycoprotein precursor
                                                                                                                                                                                                                                                                                                                                                                      1 : : | | | : | 263 PSSSNKCPDEGT 274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; M11048; AAA48438.1;
                                                                                                                                                                                                                                                                                                                           5; Conservative
                                                                                                                                                                                                                                                                                                                                                       1 PDAKTQCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                       STANDARD;
                                                                                                                                                       ; S18447.
                                                                                                                                                                                                                                                                                                             Local Similarity
                                                                                                                                                                                                                                                                   479 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID-11284;
                                                                                                                                                     PIR; S18447
                                                                                                                                                                                                                                                                                                                                                                                                                                                     VGLG_VSVO
P04884;
                                                                                                                                                                                                                         CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                   SEQUENCE
                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                             PROPEP
                                                                                                                                                                                                CHAIN
                                                                                                                                                                                                                                                      LIPID
                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 10
VGLG_VSVO
                                                                                                                                                                                                                                                                                                                           Matches
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            European Bioinformatics Institute. There are no restrictions on by non-profit institutions as long as its content is in no
N-LINKED (GLCNAC. .) (POTENTIAL).
N-LINKED (GLCNAC. .) (POTENTIAL).
F -> S (IN TEMPERATURE-SENSITIVE
MUTANT TSO45, WHICH EXHIBITS TEMPERATURE
-SENSITIVE CELL-SURFACE TRANSPORT).
                                                                                                                                                                                                   0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rarasawa A., Ito A., Okada I., Hase S., Ehara Y.;
"A possible role of RNA 2 of cucumber mosalc cucumovirus as a
determinant of infection phenotype on cowpea.";
Ann. Phytopathol. Soc. Jpn. 63:289-297(1997).
-!- FUNCTION: MAY BE INVOLVED IN THE REPLICATION OF THE VIRUS.
CONTAINS AN HELICASE DOMAIN AND A METHYLFRANSFERASE DOMAIN. THE
METHYLTRANSFERASE DOMAIN IS PROBABLY INVOLVED IN VIRAL RNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                           15-DEC-1998 (Rel. 37, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
18 protein [Includes: Helicase; Methyltransferase].
Cucumber mosaic virus (strain izuka) (CMV).
Viruses; SSRNA positive-strand viruses, no DNA stage; Bromoviridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                 Šī.
                                                                                                                                                        Length 511;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SIMILARITY: TO 1A PROTEIN FROM BMV, CCMV, PSV AND TAV.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 993;
                                                                                                                                                                                                   3; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        57570 MW; A10E67B6F8138179 CRC64;
                                                                                                                                                        Score 38; DB 1;
Pred. No. 45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (Rel. 10, Created)
(Rel. 10, Last sequence update)
(Rel. 37, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                993 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       318 AA
                                                                                                                                                                                                 1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   84;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 38;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             InterPro; IPR002588; V_methyltransf.
InterPro; IPR000606; Viral_helicasel.
Pfam; PF01443; Viral_helicasel; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                       15-DEC-1998 (Rel. 37, Created)
15-DEC-1998 (Rel. 37, Last sequ
16-OCT-2001 (Rel. 40, Last anno
                                                                                                                                                      55.1%;
63.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          55.1%;
ilarity 54.5%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; D16403; BAA03887.1; -
                                                                                                                                                 Ouery Match
Best Local Similarity 63.6
Matches 7; Conservative
                                                                                                                                                                                                                                                                   STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STANDARD;
                                                                                                                                                                                                                                          2 DAKTQCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 PDAKTOCPDDS 11
  179
336
204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      511 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=117113;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MYOD_MOUSE
P10085;
01-MAR-1989 (
01-MAR-1989 (
15-DEC-1998 (
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation for European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SUBUNIT: EFFICIENT DNA BINDING REQUIRES DIMERIZATION WITH ANOTHER BHLH PROTEIN. SEEMS TO FORM ACTIVE HETERODIMERS WITH ITF-2. SUBCELLULAR LOCATION: Nuclear. SIMILARIY: BELONGS TO THE BASIC HELIX-LOOP-HELIX (BHLH) FAMILY OF TRANSCRIPTION FACTORS. "MYOGENIC FACTORS" SUBFAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE-98001585; PubMed-9343420; MEDLINE-98001585; PubMed-9343420; The amamori Y., Wu H.Y., Sartorelli V., Redes L.; The basic domain of myogenic basic helix-loop-helix (bHLH) proteins is the novel target for direct inhibition by another bHLH protein, that the novel target for direct inhibition by another bHLH protein,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ď
                                                                                                                                                                                                                                                                                                                                                                                                                                           *MyoD1: a nuclear phosphoprotein requiring a Myc homology region to convert fibroblasts to myoblasts."; Science 242:405-411(1988).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE-94236689; PubMed-8181063;
Ma P.C.M., Rould M.A., Weintraub H., Pabo C.O.;
Crystal structure of MyoD bHLH domain-DNA complex: perspectives on DNA recognition and implications for transcriptional activation.";
Cell 77:451-459(1994).
                                                                                                                                                                                                                                                             MEDLINE-92093599; PubMed-1754380;
Zingg J.M., Alva G.P., Jost J.P.;
"Characterisation of a genomic clone covering the structural mouse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Emerson C.P. Jr.; **Myogenic lineage determination and differentiation: evidence for
                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sclurognathi; Muridae; Murinae; Mus
NCBI_TaxID=10090;
                                                                                                                                       MEDLINE-88080485; PubMed-3690668;
Davis R.L., Weintraub H., Lassar A.B.;
*Expression of a single transfected cDNA converts fibroblasts to
                                                                                                                                                                                                                                                                                                                                                                                                       Tapscott S.J., Davis R.L., Thayer M.J., Cheng P.-F., Weintraub
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pinney D.F., Pearson-White S.H., Konleczny S.F., Latham K.E.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           K-RAY CRYSTALLOGRAPHY (2.8 ANGSTROMS) OF 102-166.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                    MyoD1 gene and its promoter region.";
Nucleic Acids Res. 19:6433-6439(1991)
                                                                                                                                                                                                                                   MEDLINE-88223371; PubMed-3286015;
                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE-89019371; PubMed-3175662;
   Myoblast determination protein 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAINS OF BOTH PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         regulatory gene pathway.";
Cell 53:781-793(1988).
                                                                                                                                                                                                             51:987-1000(1987).
                                    musculus (Mouse).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  INHIBITION BY TWIST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                         SEQUENCE FROM N.A.
                  MYOD.
                                                                                                                                                                                                                                                                                                                                                                                                                             Lassar A.B.:
                                                                                                                                                                                                myoblasts
                  g
                                                                                                                                                                                                                                                                                                                                                                         FUNCTION
```

EMBL; M18779; AAA39799.1; -. EMBL; X61655; CAA43836.1; -EMBL; M84918; AAA39798.1; -

```
Proc. Natl. Acad. Sci. U.S.A. 91:1519-1523(1994).

-!- FUNCTION: MAY SERVE AS A DOCKING SITE IN THE RECEPTOR-MEDIATED

IMPORT OF SUBSTRATES ACROSS THE NUCLEAR PORE COMPLEX.

-!- SUBUNT: HOMODIMER. INTERACTS WITH DDX19.

-!- SUBCELLULAR LOCATION: NUCLEAR PORE COMPLEX. CYTOPLASMIC FILAMENTS.

-!- TISSUE SPECIFICITY: EXPRESSED IN THYMUS, SPLEEN, BONE MARROW,

KIDNEY, BRAIN AND TESTIS, BUT HARDLY IN ALL OTHER TISSUES OR IN

WHOLE EMBRYOS DURING DEVELOPMENT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "The translocation (6,9), associated with a specific subtype of acute myeloid leukemia, results in the fusion of two genes, dek and can, and the expression of a chimeric, leukemia-specific dek-can mRNA."; Mol. Cell. Biol. 12:1687-1697(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PTM: PROBABLY GLYCOSYLATED AS IT REACT WITH WHEAT GERM AGGLUTININ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NONLYMPHOCYTIC LEUKEMIA) (AML) CARRYING A CHROMOSOMAL
TRANSLOCATION T(6;9)(P23;034) THAT RESULTS IN THE FORMATION OF A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DISEASE: IMPLICATED IN A SUBSET OF ACUTE MYELOID LEUKEMIA (ACUTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 myeloid leukemogenesis, is a nuclear pore complex protein that faces the cytoplasm.";
                                                                                                                                                                                                                                                                                                                                                                                             Developmental protein; Nuclear protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HELIX-LOOP-HELIX MOTIF (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-JUN-1994 (Rel. 29, Created)
01-JUN-1994 (Rel. 29, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Nuclear pore complex protein Nup214 (Nucleoporin Nup214) (214 kDanucleoporin) (CAN protein)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TISSUE-Testis;
MEDILINE-92195315; PubMed-1549122;
Von Lindern M., Fornerod M., Van Baal S., Jaegle M., De Wit T.,
Buljs A., Grosveld G.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Kraemer D., Wozniak R.W., Blobel G., Radu A.;
"The human CAN protein, a putative oncogene product associated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 37; DB 1; Length 318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      48C836896FCBDC0C CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                          Transcription regulation; DNA-binding; 3D-structure.
DNA_BIND 109 121 BASIC DOMAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2090 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CHARACTERIZATION.
MEDLINE-94151361; PubMed-8108440;
                                                                                                               MGD; MGI:97275; Myodl.
InterPro: IPR001092546; Basic.
InterPro: IPR001092; HLH_basic.
Pfam; PF0010; HLH: 1.
SMART; SM00520; BASIC; 1.
SMART; SM00553; HLH: 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DOMAIN: CONTAINS F-G REPEATS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      34218 MW;
                                                                                                                                                                                                                                                                                                                                                                                          Myogenesis; Differentiation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               53.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            nucleoporin) (CAN protein).
NUP214 OR CAN OR CAIN.
                                                                                                                                                                                                                                                                                                                                    PROSITE; PS00038; HLH_1; 1. PROSITE; PS50888; HLH_2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best_Local Similarity 63.6
Matches 7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    299 PDAAPQCPAGS 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 PDAKTOCPDDS 11
                                                         1MDY; 31-AUG-94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (Human)
A29636; A29636.
S22587; S22587.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      318 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo saplens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       N214_HUMAN
P35658;
                                                                                            TRANSFAC;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             N214_HUMAN
                                                                  PDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PARTHER BY SECOND COLOR 
      DR KWW KWW SOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    엄
```

```
MIM; 103390
                                                                                                                                                                                                      DOMAIN
SEQUENCE
                                                                                                                                                 NON_CONS
                                                                                                                                                                                                                                        Query Match
                                                                                                                 Genew;
                                                                                                                                                          DOMAIN
                                                                                                                                                                      DOMAIN
                                                                                                                                                                                DOMAIN
                                                                                                                                                                                            DOMAIN
                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                          RESULT 15
  ò
                                                                                                                                                                                                                                                                                                       g
                                                              This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation her Burpaen Bioinformatics institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                ö
         DISEASE: IN A CASE OF ACUTE UNDIFFERENTIATED LEUKEMIA (AUL) A RANSINCARION RESULTS IN THE FORMATION OF A SET-CAN FUSION GENE. DATABASE: NAME-Atlas Genet. Cytogenet. Oncol. Haematol.; WWW-"http://www.infobiogen.fr/services/chromozancer/Genes/CAN.html".
                                                                                                                                                                                                                        Pfan; PF03093; Nucleoporin_FG; 17.
SMART; SM00320; WD40; 1.
Nuclear protein; Transport; Proto-oncogene; Chromosomal translocation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Shtivelman E., Cohen F.E., Bishop J.M.;
"A human gene (AHNAK) encoding an unusually large protein with a 1.2-
                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Craniata; Vertebrata; Euteleostomi;
Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-FEB-1996 (Rel. 33, Created)
01-FEB-1996 (Rel. 33, Last sequence update)
16-CCT-2001 (Rel. 40, Last annotation update)
Neuroblast differentiation associated protein AHNAK (Desmoyokin)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Shtirelman E., Cohen F.E., Bishop J.M.;
Proc. Natl. Acad. Sci. U.S.A. 90:4328-4328(1993).
-1- FUNCTION: MAY BE REQUIRED FOR NEURONAL CELL DIFFERENTIATION.
                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                      11 X 5 AA APPROXIMATE REPEATS.
18 X 4 AA APPROXIMATE REPEATS.
11 X 3 AA APPROXIMATE REPEATS.
PRO/SER/THR-RICH.
LEUCINE-ZIPPER 1.
LEUCINE-ZIPPER 2.
                                                                                                                                                                                                                                                                                                                                                                       ; Score 37; DB 1; Length 2090; Pred. No. 2.5e+02; 1; Mismatches 2; Indels
                                                                                                                                                                                                                                                                                                                                                   6DBE767FDD857F8F CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -1- SUBCELLULAR LOCATION: Nuclear.
-1- CAUTION: IT IS UNCERTAIN WHETHER MET-1 OR MET-62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     microns polyionic rod structure. ";
Proc. Natl. Acad. Sci. U.S.A. 89:5472-5476(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT; 2960 AA.
                                                                                                                                                                                                                                                                                                                                          BREAKPOINT
                                                                                                                                                                                                 Interpro; IPR004325; Nucleoporin_FG. Interpro; IPR001680; WD40.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TISSUE-Placenta;
MEDLINE-92302265; PubMed-1608957;
                                                                                                                                                                                                                                                                                                                                                   213766 MW;
                                                                                                                                                       EMBL; X64228; CAA45535.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens (Human).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                                                                                                                                                                                                                                                                                                                                                                          53.68;
                                                                                                                                                                PIR; $26058; $26058.
Genew; HGNC:8064; NUP214.
MIM; 114350; -.
                                                                                                                                                                                                                                                                                                                                                                                                6; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                 ||:| | ||
998 DARTSCKDD 1006
                                                                                                                                                                                                                                                                                  2084
2085
2090
                                                                                                                                                                                                                                                                                                                   992
                                                                                                                                                                                                                                                                                                                            882
813
                                                                                                                                                                                                                                                                                                                                                                                                                    2 DAKTOCPDD 10
                                                                                                                                                                                                                                                             Repeat; Glycoprotein
                                                                                                                                                                                                                                                                                                                                                      ¥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID-9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AHNAK OR PM227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         INITIATOR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AHNK_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (Fragments)
                                                                                                                                                                                                                                                                                                                                                   SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ERRATUM.
                                                                                                                                                                                                                                                                        DOMAIN
                                                                                                                                                                                                                                                                                               DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AHNK_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                               Matches
ô
                                                                                                                                                                                                                                                                                                                                                                                                                                       <u>.</u> පු
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is. In no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@lsb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bristow J., Tee M.K., Gitelman S.E., Mellon S.H., Miller W.L.; "Tenascin.X: a novel extracellular matrix protein encoded by the human XB gene overlapping P450c21B."; J. Gell Biol. 122:265-278 (1993).
                                                                                                                                                                                                                                                                                                                                                                                        (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rowen L., Dankers C., Baskin D., Faust J., Loretz C., Ahearn M.E., Banta A., Schwartzell S., Smith T.M., Spies T., Hood L.; Sequence determination of 300 kilobases of the human class III MHC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TISSUE-Fetal adrenal gland;

BUDDILNE-97081760; PubMed-8923003;

Speck M., Barry F., Miller W.L.;

"Alternate promoters and alternate splicing of human tenascin-X,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene
a novel,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                          e (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 2960;
                                                                                                                                                                                                                                                                                                                                                                                        NUCLEAR LOCALIZATION SIGNAL (F
NUCLEAR LOCALIZATION SIGNAL (F)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 37; DB 1; Lengtn 220.
Pred. No. 3.4e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Submitted (SEP-1997) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TISSUE-Adrenal gland;
MEDLINE-96015044; PubMed-8530023;
Tee M.K., Thomson A.A., Bristow J., Miller W.L.;
Sequences promoting the transcription of the human XA
overlapping 9450c21A correctly predict the presence of
adrenal-specific, truncated form of tenascin-X.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TENX HUMAN STANDARD; PRT; 4289 AA. P22105; P78530; P78531; Q08424; Q9UMG7; 01-AUG-1991 (Rel. 19, Created) 16-CCT-2001 (Rel. 19, Last sequence update) 15-UMY-2002 (Rel. 41, Last annotation update) Tenascin-X precursor (TN-X) (Hexabrachion-like).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE OF 1-747 AND 1687-1944 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A. (ISOFORM XB-SHORT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TISSUE-Leukocyte;
MEDLINE-93300909; PubMed-7686164;
                                                                                                                                                                                                                            EMBL; M80902; AAA69899.1; -. EMBL; M80899; AAA69898.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      53.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AA; 312487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Senomics 28:171-178(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE OF 1-23 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 || ::|||
1647 PDVELECPD 1655
                                                                                                                                                                                                                                                                                        HGNC (347; AHNAK.
                                                                                                                                                                                                                                                                                                                                                                                           2049
                                                                                                                                                                                                                                                                                                                                                                                                                                                 2109
2786
2849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens (Human).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 PDAKTOCPD 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                 2104
2776
2842
2960
                                                                                                                                                                                                                                                                                                                                              Nuclear protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                        2041
```

us-09-824-647-4.rsp

```
DISULFID
DISULFID
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DOMAIN
DOMAIN
DOMAIN
SITE
                                        SIGNAL
CHAIN
DOMAIN
DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
                                                                                                              DOMAIN
                                                                                                                                                                                                                                                          DOMAIN
                                                                                                                                                                                                                                                                              DOMAIN
                                                                                                                                                                   DOMAIN
                                                                                                                                                                            DOMAIN
                                                                                                                                                                                      DOMAIN
                                                                                                                                                                                               DOMAIN
                                                                                                                                                                                                          DOMAIN
                                                                                                                                                                                                                    DOMAIN
                                                                                                                                                                                                                             DOMAIN
                                                                                                                                                                                                                                      DOMAIN
                                                                                                                                                                                                                                                 DOMAIN
                                                                                                                                                                                                                                                                                                                                                    DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                        DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DOMAIN
                                                                                                      DOMAIN
                                                                                                                                    DOMAIN
                                                                                                                                              DOMAIN
                                                                                                                                                        DOMAIN
   This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@ibs-sib.ch).
                                                                                                                                                                                                     OF EPITHELIAL TOMORS.
SUBCELLUGAR LOCATION: Extracellular matrix.
ALTERNATURE PRODUCTS: AT LEAST 2 ISOFORMS.
TSSPORMS.
TSSUB SPECIFICITY: HIGHLY EXPRESSED IN FETAL ADRENAL, IN FETAL TESTIS, FETAL SMOOTH, STRIANED AND CARDIAC MUSCLE. XB-SHORT IS ONLY EXPRESSED IN THE ADRENAL GLAND.
DISEASE: ASSOCIATION WITH CONGENITAL ADRENAL HYPERPLASIA.
DISEASE: Defects in TNNB are the cause of an autosomal recessive form of Ehlers-Danios syndrome (EDS) manifesting with hyperextensible skin, hypermobile joints, and tissue fragility as observed in classical EDS, but lacking atrophic scars and delayed
                                                                                                                     SEQUENCE OF 3470-4289 FROM N.A.
MEDLINE-89367293; PubMed-2475872;
Morel Y., Bristow J., Gitelman S.E., Miller W.L.;
"Transcript encoded on the opposite strand of the human steroid 21-hydroxylass/complement component C4 gene locus.";
Proc. Natl. Acad. Sci. U.S.A. 86:6582-6586(1989).
                                                                                                                                                                                                                                                                                                                             wound healing.
SIMILARITY: CONTAINS 19 EGF-LIKE DOMAINS.
SIMILARITY: CONTAINS 3 FIRKONECTIN TYPE III-LIKE DOMAINS.
SIMILARITY: CONTAINS 1 FIBRINGEN C-TERMINAL DOMAIN.
CAUTION: THERE ARE TWO GENES FOR TN-X: TNXA AND TNXB. TNXA IS
PARTIAL GENE WHICH CAN SOMETIMES RECOMBINE WITH TNXB.
  other genes.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro: IPR000561; EGF-11ke.
InterPro: IPR001961; FN_III.
InterPro: IPR001961; FN_III.
InterPro: IPR002181; Fibrinogen_C.
InterPro: IPR002049; Laminin_EGF.
Pfam; PF00008; EGF; 15.
Pfam; PF00141; fais; 33.
Pfam; PF00147; fibrinogen_C; I.
PRINTS; PR00011; EGFLAMININ.
SNART; SM00181; EGF; 8.
SNART; SM001081; EGF; 8.
SNART; SM00186; FNG; 1.
gene with 5' and 3' ends buried in c
Hum. Mol. Genet. 5:1749-1758(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AP019413; AAB67981.1; ... X71923; CAAS0739.1; ... X171923; CAA74100.1; ... X13783; CAA74110.1; ... X13783; CAA74110.1; ... X13783; AAA4110.1; ... X13783; AAA35884.1; ... W25813; AAA35884.1; ... W25813; AAA35884.1; ...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; U89337; AAB47488.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PS00022; EGF_1; 18
PS01186; EGF_2; 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HGNC:11976; TNXB.
                                                                                                    DISEASE.
PubMed-11642233;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HSSP; P02671;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MIM; 600985;
MIM; 606408;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PROSITE;
PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Genew;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL;
```

```
coil;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SITE (POTENTIAL).
PROSITE; PS00514; FIBRIN_AG_C_DOMAIN; 1.
Glycoprotein; Cell adhesion; Repeat; EGF-like domain; Coiled
Extracellular matrix; Alternative splicing; Signal;
                                                                             110.
                                                                                                                                                                                                                                                                                                                                                                                                                                                    (INCOMPLETE)
                                                                                                                                                                                                                                                                                        FIBRONECTIN TYPE-III 1.
COILED COIL (POTENTIAL)
FIBRONECTIN TYPE-III 2.
FIBRONECTIN TYPE-III 3.
                                                                                                                                                                                                                                                                                                                                   FIBRONECTIN TYPE-III 4
FIBRONECTIN TYPE-III 5
FIBRONECTIN TYPE-III 7
FIBRONECTIN TYPE-III 7
FIBRONECTIN TYPE-III 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FIBRONECTIN TYPE-III 2
FIBRONECTIN TYPE-III 2
FIBRONECTIN TYPE-III 2
FIBRONECTIN TYPE-III 2
FIBRONECTIN TYPE-III 3
FIBRONECTIN TYPE-III 3
FIBRONECTIN TYPE-III 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FIBRINGEN C-TERMINAL.
                                                                                                                                                                                                                                                                                                                                                                                                     FIBRONECTIN TYPE-III
FIBRONECTIN TYPE-III
FIBRONECTIN TYPE-III
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FIBRONECTIN TYPE-III
FIBRONECTIN TYPE-III
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FIBRONECTIN TYPE-III
FIBRONECTIN TYPE-III
                                                                                                                                                                                                                                                                                                                                                                                                                                          FIBRONECTIN TYPE-III
                                                                                                                                                                                                                                                                                                                                                                                                                                                               FIBRONECTIN TYPE-III
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FIBRONECTIN TYPE-III
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FIBRONECTIN TYPE-III
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PIBRONECTIN TYPE-III
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FIBRONECTIN TYPE-III
                                                                                                                                                                                                                                                                                                                                                                                                                                                     FIBRONECTIN TYPE-III
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CELL ATTACHMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SIMILARITY.
SIMILARITY.
SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SIMILARITY
                                                                                                                                                                        EGF-LIKE 10.
EGF-LIKE 12.
EGF-LIKE 13.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SIMILARIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FIBRONECTIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FIBRONECTIN
                                                         TENASCIN-X.
EGF-LIKE 1 (
EGF-LIKE 2.
                                                                                                                                                                                                                                EGF-LIKE 15
EGF-LIKE 16
                                                                                                                                                                                                                                                       EGF-LIKE 17
EGF-LIKE 18
                                                                                                                                                                                                                                                                               EGF-LIKE 19
                                                                                          EGF-LIKE 3.
EGF-LIKE 4.
EGF-LIKE 6.
EGF-LIKE 7.
EGF-LIKE 7.
EGF-LIKE 10.
EGF-LIKE 10.
                                                                                                                                                                                                                     EGF-LIKE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3575
3682
3787
3879
3971
4289
4289
1750
197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2446
2552
2663
2769
2875
                                     Ehlers-Danlos syndrome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3978
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2688
2794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DISCLETO
DISCLETO
DISCLETO
DISCLETO
DISCLETO
DISCLETO
DISCLETO
DISCLETO
DISCLETO
```

SIMILARITI. SIMILARITY. SIMILARITY. SIMILARITY.
421 430 BI SIMILARITY 425 A46 BV SIMILARITY
DISULFID 43

Search completed: July 8, 2003, 16:25:01 Job time: 7.84615 secs

oy G

# GenCore version 5.1.6 Copyright (c) 1993 - 2003 Compugen Ltd.

OM protein - protein search, using sw model

July 8, 2003, 16:17:10; Search time 25.8462 Seconds (without alignments) 95.665 Million cell updates/sec Run on:

US-09-824-647-4 69 1 PDAKTQCPDDST 12

Title: Perfect score: Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

671580 seqs, 206047115 residues Searched:

671580 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Database :

sp\_archea:\* sp\_bacteria:\* SPTREMBL\_21:\* fundi:\* sp\_human; \*

sp\_vertebrate:\*
sp\_unclassified:\* sp\_invertebrate:\* sp\_rvirus:\*
sp\_bacteriap:\*
sp\_archeap:\* sp\_organelle:\* sp\_plant:\*
sp\_rodent:\* sp\_mammal:\* sp\_virus:\* sp\_phage:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

#### SUMMARIES

	Description	Q9d2v3 mus musculu	O9dwb4 mus sp. pc	Q8t913 drosophila	089001 vestcular s	Q89002 vesicular s	Q89005 vesicular s	Q89008 vestcular s	Q89625 vesicular s	Q89767 vesicular s	Q89878 vesicular s	Q8wpk9 oikopleura	Q9u362 caenorhabd1	Q8ztl3 pyrobaculum	Q8yd93 brucella me	Q90zd0 brachydan1o	Q90zc9 brachydanio
				•			-							•			
	٠																
	A	Q9D2V3	<b>090WB4</b>	Q8T9J3	089001	089002	089005	089008	089625	089767	089878	Q8WPK9	Q9U362	Q8ZTL3	<b>08YD93</b>	002060	090zc9
	DB	7	11	S	12	12	12	12	12	12	12	S	S	17	16	13	13
	Wery Match Length DB	589	51	384	511	511	511	511	511	511	511	1557	358	463	206	147	147
æ (	Watch	100.0	94.2	68.1	65.2	65.2	65.2	65.2	65.2	65.2	65.2	65.2	62.3	6.09	6.09	59.4	59.4
	Score	69	9	47	45	45	45	45	45	45	45	45	43.	42	42	41	41
41	No.	1	7	٣	4		φ	7	80	6	10	11	12	13	14	15	16

Q902c8 brachydanio Q9wuvl mus musculu Q9yg0 cestia c-ni Q7659 caenorhabdi Q20511 caenorhabdi Q20511 caenorhabdi Q20515 caenorhabdi Q20515 homo sapien Q9hidy alobacteri Q92f3 listeria in Q92f3 listeria in Q8yat2 listeria mo Q29289 archaeoglob Q96f6 trypanosoma Q18997 trypanosoma Q18997 trypanosoma Q18997 trichoderma Q88998 vesicular s Q89900 vesicular s Q89001 vesicular s	ຍບຼ
F. Carlotte and the second second	
09902C8 09907U1 076599 020511 092JG3 092JG3 091LL5 091LL5 091RL5 091RL5 091RL5 091RL5 091RL5 091RP3 0016766 016769 016766 016979	P92135 Q18824 Q8UGM0
11122 9 7 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	หังกะ เ
741 564 749 749 749 749 749 749 749 74	1125 1125 1283 127
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	55.1 55.1 53.1
4 4 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	38 38 37
7 1 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	444

### ALIGNMENTS

us-09-824-647-4.rspt

```
Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         089002
                                                                                                                                                                                                    089001
                                                                                                                                                                          RESULT 4
Q89001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 5
    3 K S
                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                           ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ---,yyoua; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
NCBI_TaxID=7227;
                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Mus.
NCBI_TaxID=10095;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Zhou J., Gao G., Crabb J.W., Serrero G.;
"Purification of an autocrine growth factor homologous with mouse epithelin precursor from a highly tumorigenic cell line.";
J. Biol. Chem. 268:10869(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
Stapleton M., Brokstein P., Hong L., Agbayani A., Carlson J.,
Stapleton M., Chavez C., Dorsett V., Farfan D., Frise E., George R.,
Gonzalez M., Guarin H., Li P., Liao G., Miranda A., Mungall C.J.,
Nunoo J., Pacleb J., Paragas V., Park S., Phouanenavong S., Wan K.
Yu C., Lewis S.E., Rubin G.M., Celniker S.;
                                                                                                                                                                                                                                                                                                             01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-MAY-2000 (TrEMBLrel. 13, Last annotation update)
PC cell-derived growth factor, PCDGF-EPITHELIN precursor homolog
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
                                                                                                                        Length 589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 65; DB 11; Length 51;
Pred. No. 0.00012;
); Mismatches. 1; Indels
                                                                                                                                                 Indels
                                                              PROSITE; PS00799; GRANULINS; 7.
PROSITE; PS00118; PA2_HIS; UNKNOWN_1.
SEQUENCE 589 AA; 63405 MW; 1DE6229C413CA292 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C349143EE4E942AF CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Last sequence update)
Last annotation update)
                                                                                                                     Score 69; DB 11;
Pred. No. 0.0003;
                                                                                                                                                                                                                                                                       51 AA.
                                                                                                                                               0; Mismatches
MGD; MGI:95832; Grn.
InterPro; IPR000118; Granulin.
InterPro; IPR001211; PhospholipaseA2.
Pfam; PF00396; granulin; 7.
SWART; SM00277; GRAN; 7.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Created)
                                                                                                                                                                                                                                                                                                 Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRT;
                                                                                                                                                                                                                                                                       PRT:
                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE-93266526; PubMed-8496151;
                                                                                                                       100.0%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (TrEMBLrel. 21, C
(TrEMBLrel. 21, I
(TrEMBLrel. 21, I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             94.2%;
91.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   51 AA; 5473 MW;
                                                                                                                                                                                                                                                                                               (TrEMBLrel. 13,
                                                                                                                                                                                         PDAKTQCPDDST 219
                                                                                                                                   Local Similarity 100.
nes 12; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11 PDAKTQCPDDXT 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 PDAKTOCPDDST 12
                                                                                                                                                                          1 PDAKTQCPDDST 12
                                                                                                                                                                                                                                                                       PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-JUN-2002
01-JUN-2002
01-JUN-2002
                                                                                                                                                                                                                                                                                                                                                     (Fragments).
                                                                                                                                                                                                                                                                                              01-MAY-2000
01-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GM08106p.
CG13252.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NON TER
SEQUENCE
                                                                                                                                                                                                    208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NON_CONS
                                                                                                                     Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q8T9J3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q8T9J3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                  Matches
                                                                                                                                                                                                                                           RESULT 2
Q9QWB4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                  ò
    ð
```

```
Gaps
                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    *Polymerase errors accumulating during natural evolution of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         *Polymerase errors accumulating during natural evolution of the glycoprotein gene of vesicular stomatitis virus indiana serotype
                                                                                                              .
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 12; Length 511; 5.6;
                                                                              Length 384;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                             Viruses; ssRNA negative-strand viruses; Mononegavirales; Rhabdoviridae; Vesiculovirus.
                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Viruses; ssRNA negative-strand viruses; Mononegavirales;
Rhabdoviridae; Vesiculovirus.
Submitted (DEC-2001) to the EMBL/GenBank/DDBJ databases. EMBL; AY069266; AAL39411.1; -SEQUENCE 384 Aa; 42646 MW; 20AF3FIACA95954D CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1501ates ";
1501ates ";
J. Virol. 64:4873-4883(1990).
J. Virol. 64:4873-4883(1990).
EMBL; M35220; AAA48390.1; -.
InterPro. IFF001903; Rhabd_glycop.
Pfam, PF00974; Rhabd_glycop; 1.
***Control. E 511 AA; 57519 MW; 93B338029EB50957 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-NOV-1996 (TrEMBLrel. 01, Created)
01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-JUN-2001 (TFEMBLrel. 17, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-NOV-1996 (TrEMBLrel. 01, Created)
01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
(strain 85-ES-B1) glycoprotein.
Vesicular stomatitis virus.
                                                                              DB 5;
                                                                                                                                                                                                                                                                                                  511, AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 45; DB :
Pred. No. 5.6;
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           511 AA
                                                                                                                      2; Mismatches
                                                                                Score 47;
                                                                                                     Pred. No.
                                                                                                                                                                                                                                                                                                      PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
MEDLINE-90376442; PubMed-2168974;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE-90376442; PubMed-2168974;
                                                                                                                                                                                                                                                                                                                                                                                                          (strain 83-HD-B2) glycoprotein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   65.2%;
                                                                                68.18;
                                                                                                 illarity 66.7%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                               Vesicular stomatitis virus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bilsel P.A., Nichol S.T.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       427 PDATSOLPDDET 438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bilsel P.A., Nichol S.T.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 PDAKTQCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                             1 PDAKTOCPDDST 12
                                                                                                                                                                                    45 PDAEMQCPADSS 56
                                                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                              Query Match
Best Local Similarity
Matches 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
Matches 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=11276;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=11276;
```

ö

Length 511;

427 PDATSQLPDDET 438

66.78;

089005

RESULT 6 Q89005

g

```
glycoprotein gene of vesicular stomatitis virus Indiana serotype
                                                                                                                                                                                                                                                                                                                                                                                                                        glycoprotein gene of vesicular stomatitis virus Indiana serotype
                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
MEDILINE-90376442; PubMed-2168974;
Bilsel P.A., Nichol S.T.;
*Polymerase efrors accumulating during natural evolution of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Polymerase errors accumulating during natural evolution of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 45; DB 12; Length 511;
Pred. No. 5.6;
1; Mismatches 3; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 45; DB 12; Length 511;
Pred. No. 5.6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Viruses; ssRNA negative-strand viruses; Mononegavirales;
Rhabdoviridae; Vesiculovirus.
                                                                                                                                                                                                                                                VIruses; ssRNA negative-strand virusęs; Mononegavirales;
Rhabdoviridãe; Vesiculovirus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; M35217; AAA48387.1; --
EMBL; M35216; AAA48386.1; --
InterPro; IPR001903; Rhabd_glycop.
Pfam; PF00974; Rhabd_glycop. 1.
SEQUENCE 511 AA; 57421 MW; FFB3A673DBB50956 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Interpro; IPR001903; Rhabd_glycop.
Pfam; PF00974; Rhabd_glycop; 1.
SEQUENCE 511 AA; 57493 MW; 367C936F286E64E1 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (TrEMBLrel. 01, Created)
(TrEMBLrel. 01, Last sequence update)
(TrEMBLrel. 17, Last annotation update)
                                                                                                                                                                 01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         511 AA
                                                                                                       511 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1; Mismatches
                                                                                                                                             Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT;
                                                                                                     PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A. MEDLINE-90376442; PubMed-2168974; Bilsel P.A., Nichol S.T.;
                                                                                                                                                                                                                                                                                                                                                                                                                                         Jedates.";
T. Virol. 64:4873\4883(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   64:4873-4883(1990)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         65.2%;
66.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity 66.7%;
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        J. Virol. 64:4873-4883(1990)
EMBL; M35224; AAA48394.1; -
EMBL; M35221; AAA48391.1; -
EMBL; M35223; AAA48393.1; -
                                                                                                                                             01,
01,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (strain 86-ES-B1).
Vesicular stomatitis virus
                                                                                                                                                                                                                              Vesicular stomatitis virus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |||| :| ||| |
427 PDATSQLPDDET 438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                111 : 111 1
427 PDATSQLPDDET 438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 PDAKTOCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 PDAKTQCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRELIMINARY;
                                                                                                       PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=11276;
                                                                                                                                                                                                                                                                                              NCBI_TaxID=11276;
                                                                                                                                                                                                             (strain 83-HD-Bl)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q89767;
01-NOV-1996 (
01-NOV-1996 (
01-JUN-2001 (
                                                                                                                                             01-NOV-1996
01-NOV-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Isolates.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Virol
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     089767
                                                                                                     089625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                             RESULT 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE-90376442; PubMed-2168974; Blisel P.A., Nichol S.T.; Polymerase errors accumulating during natural evolution of the glycoprotein gene of vesicular stomatitis virus indiana serotype
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bilsel P.A., Nichol S.T., "Polymerase errors accumulating during natural evolution of the glycoprotein gene of vesicular stomatitis virus indiana serotype
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 45; DB 12; Length 511;
Pred. No. 5.6;
1; Mismatches 3; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 511;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (strain 85-ES-B2) glycoprotein.
Vesicular stomatitis virus.
Viruses; ssRMs negative-strand viruses; Mononegavirales;
Rhabdoviridae; Vesiculovirus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3; Indels
                      Indels
                                                                                                                                                                                                                                                                                                                                                      Viruses; ssRNA negative-strand viruses; Mononegavirales;
Rhabdoviridae; Vesiculovirus.
NCBI_TaxID=11276;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL; M35228; AAA48398.1; -
InterPro; IPR001903; Rhabd_glycop.
Pfam; PF00974; Rhabd_glycop; 1.
SEQUENCE 511 AA; 57484 MW; 687FB74FD58861F1 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL; M35232; AAA48402.1; -.
InterPro; IPR001903; Rhabd_glycop.
Pfam; PF00974; Rhabd_glycop; 1.
SEQUENCE 511 AA; 57518 WW; 93B338029EB50177 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-NOV:1996 (TrEMBLrel. 01, Created)
01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
                                                                                                                                                                                                                                                                             (TrEMBLrel. 01, Last sequence update) (TrEMBLrel. 17, Last annotation update)
                   3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   65.2%; Score 45; DB 12;
66.7%; Pred. No. 5.6;
iive 1; Mismatches 3
                                                                                                                                                                                                               511 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             511 AA
Pred. No. 5.6
1; Mismatches
                                                                                                                                                                                                                                                    01-NOV-1996 (TrEMBLrel. 01, Created)
                                                                                                                                                                                                               PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE-90376442; PubMed-2168974;
                                                                                                                                                                                                                                                                                                                  (strain 86-GM-B) glycoprotein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         . 64:4873-4883(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              . 64:4873-4883(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       65.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity 66.74
Matches 8; Conservative
                                                                                                     427 PDATSQLPDDET 438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   111 : | 111 |
427 PDATSQLPDDET 438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8; Conservative
                   Conservative
                                                             1 PDAKTQCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 PDAKTOCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PDAKTQCPDDST 12
                                                                                                                                                                                                               PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
Best Local Similarity
Matches 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=11276;
                                                                                                                                                                                                                                                                                                 01-JUN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          solates.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        lsolates.
```

088008

RESULT 7 089008

g

ŏ

J. Virol

Matches

ö

Gaps

ö

Indels

ö

Gaps

ö

Virol

ŏ

089878

DR REPRESENTED TO THE PROPERTY OF THE PROPERTY

RESULT 10 Q89878

```
EMBL; 281595; CABCTON 
                                                                                                                                                                              Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida; Rhabditoidea; Rhabditidae; Peloderinae; Caenorhabditis. MCBL_TaxID=6239;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "Genome sequence of the hyperthermophilic crenarchaeon Pyrobaculum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Fitz-Gibbon S.T., Ladner H., Kim U.-J., Stetter K.O., Simon M.I.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                            -I- ALTERNATIVE PRODUCTS: 2 ISOFORMS; T22H2.6A (SHOWN HERE) AND T22H2.6B; ARE PRODUCED BY ALTERNATIVE SPLICING.
EMBL; 281595; CAB54304.1; ---
EMBL; 281595; CAB54305.1; ---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              60.9%; Score 42; DB 17; Length 463; 66.7%; Pred. No. 17; ive 0; Mismatches 4; Indels
                                                                                                                                                                                                                                                                                                                                                                                         Lennard N.; Submitted (NOV-1996) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Archaea; Crenarchaeota; Thermoprotei; Thermoproteales; Thermoproteaceae; Pyrobaculum.
NCBL_TaxID=13773;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          E63FF2F59A21B18C CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Last sequence update)
Last annotation update)
01-WAY-2000 (TrEMBLrel. 13, Last sequence update) 01-WAR-2002 (TrEMBLrel. 20, Last annotation update) Hypothetical 39.8 kDa protein T22H2.6.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Proc. Natl. Acad. Sci. U.S.A. 99:984-989(2002).
EMBL; AE009917; AaL64748.1; -.
InterPro; IPR001525; C5_DNA_meth.
Pfam: PF00145; DNA_methylase; I.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      463 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   proteome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        C-5 cytosine-specific DNA methylase PAE3201.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
STRAIN~IM2 / ATCC 51768 / DSM 7523;
PubMed-11792869;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRINTS; PR00105; C5METTRFRASE.
TIGRFAMS; TIGR00675; dcm; 1.
PROSITE; PS00094; C5_MTASE_1; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Methyltransferase; Complete pr
SEQUENCE 463 AA; 52202 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-MAR-2002 (TrEMBLrel. 20, 01-MAR-2002 (TrEMBLrel. 20, 01-JUN-2002 (TrEMBLrel. 21,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 62.3
Best Local Similarity 63.6
Matches 7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 PDAKTOCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2 DAKTQCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pyrobaculum aerophilum.
                                                                                                                                                              Caenorhabditis elegans.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              463 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Similarity
Matches 8: Conserm
                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PR00105;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Miller J.H.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 aerophilum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                               r22H2.6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q8ZTL3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q8ZTL3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      O8ZIL3
               STITIES OF SUBSECT STRUCK SON STRUCK SON SUBSECT SON SUBSECT S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
Seo H.C., Kube M., Edvardsen R.B., Jensen M.F., Beck A., Spriet E.,
Gorsky G., Thompson E.M., Lehrach H., Reinhardt R., Chourrout D.;
"The marine chordate Oikopleura dioica has a miniature genome.";
Science 0:0-0(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "Polymerase errors accumulating during natural evolution of the glycoprotein gene of vesicular stomatitis virus Indiana serotype isolates.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            65.2%; Score 45; DB 12; Length 511; 66.7%; Pred. No. 5.6; ive 1; Mismatches 3; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 45; DB 5; Length 1557;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Urochordata; Appendicularia;
Oikopleuridae; Oikopleura.
NCBI_TaxID=34765;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            57CCCCOFDFA98DDD CRC64;
                                                                                                                                                                                                                                                                                                                                                                                     Viruses; ssRNA negative-strand viruses; Mononegavirales;
Rhabdoviridae; Vesiculovirus.
NCBI_TaxID=11276;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          J. Virol. 64:4873-4883(1990).

EMBL; M3522; AAA48399.1; -.

EMBL; M35221; AAA48392.1; -.

Interpro; IPRO01903; Mabd_glycop.

Ffam; PFO074; Rhabd_glycop; 1.

SEQUENCE 511 AA; 57475 MW; F8D3A773DBB50956 CRC64;
                                                                                                                                                                                          01-NOV-1996 (TrEMBLrel. 01, Created)
01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-UNN-2001 (TrEMBLrel. 17, Last annotation update)
(strain 85-GM-B).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        . 20, Last sequence update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 358 AA.
                                                                                                                               511 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT; 1557 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pred. No. 18;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 O90362 PRELIMINARY; PRT;
Q90362; Q90361;
01-MAY-2000 (TrEMBLrel. 13, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ul-MAR-2002 (TrEMBLFel. 20, Last se 01-MAR-2002 (TrEMBLFel. 20, Last se Similar to silk protein (Fragment). BAC001.24.
                                                                                                                               PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE-90376442; PubMed-2168974;
Bilsel P.A., Nichol S.T.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1557 AA; 170296 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; AF374376; AAL56451.1; -. NON_TER 1557 1557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                65.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-MAR-2002 (TrEMBLrel. 20,
                                                                                                                                                                                                                                                                                                                                                     Vesicular stomatitis virus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ||| :| ||| |
|427 PDATSQLPDDET 438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 65.2
Best Local Similarity 70.0
Matches 7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 PDAKTOCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRELIMINARY;
                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              377 PDLNNOCPDD 386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 PDAKTQCPDD 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Oikopleura dioica.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Local Similarity
Matches 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
```

Q8WPK9 OBWPK9

RESULT 11

ŏ g Q8WPK9

NON\_TER

RESULT 12 Q9U362

a z z

à 셤 a Zi

ö

ö

Gaps

```
ö
                                                                                                                                                                                                                                                                                                 DelVecchio V.G., Kapatral V., Redkar R.J., Patra G., Mujer C., Los T., Ivanova N., Anderson I., Bhattacharyya A., Lykidis A., Reznik G., Jablonski L., Larsen N., D'Souza M., Bernal A., Mazur M., Goltsman E., Selkov E., Elzer P.H., Hagius S., O'Callaghan D., Letesson J.-J., Haselkorn R., Kyrpides N., Overbeek R.; The genome sequence of the facultative intracellular pathogen Brucella melitensis.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Brachydanio rerio (2ebrafish) (Zebra danio).
Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Actinopterygii; Neopterygii; Teleostei; Ostariophysi; Cypriniformes;
Cyprinidae; Danio.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                          Brucella melitensis.
Bacteria: Proteobacteria; alpha subdivision; Rhizobiaceae group;
Brucellaceae; Brucella.
NCBL_TaxID=29459;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 41; DB 13; Length 147;
Pred. No. 7.9;
2; Mismatches 2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 42; DB 16; Length 506;
Pred. No. 19;
2; Mismatches 3; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Cadieux B., Bennett H.P.J.;
"Zebrafish granulin 1, 2, and hybrid cDNA sequences.";
Submitted (JUN-2000) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pfan; PP00396; granulin; 1.
PROSITE; PS00317; 4_DISULFIDE_CORE; UNKNOWN_1.
SEQUENCE 147 AA; 16157 MW; 7A5D6864073A6CCC CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          506 AA; 55159 MW; C2F386ADBE79A999 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-DEC-2001 (TrEMBLrel. 19, Created)
01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
                                                                    01-MAR-2002 (TrEMBLrel. 20, Created)
1-MAR-2002 (TrEMBLrel. 20, Last sequence update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
Periplasmic dipeptide transport protein precursor.
                                                                                                                                                                                                                                                                                                                                                                                                                               Proc. Natl. Acad. Sci. U.S.A. 99:443-448(2002)
EMBL, AAE096666, AAL5325.1, .
InterPro; IPR000914; SBP_bac_5.
Pfam; PF00496; SBP_bac_5; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             147 AA
                                     506 AA
                                                                                                                                                                                                                                                                  STRAIN-16M / ATCC 23456 / BIOTYPE 1;
MEDLINE-20020109; Pubmed-11756688;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRT;
                                     PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; AF273479; AAK58708.1; -.
InterPro; IPR000118; Granulin.
InterPro; IPR002221; WAP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            60.9%;
58.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 59.4%;
Best Local Similarity 63.6%;
Matches 7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | | |:||| :|
143 PIASTECPDPAT 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best Local Similarity 58.3
Matches 7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 PDAKTQCPDDST 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                     PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Complete proteome
SEQUENCE 506 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                 Q8YD93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q902D0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            090ZD0
RESULT 14
Q8YD93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 15
Q90ZD0
                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
```

2 DAKTQCPDDST 12

ő

```
39 DAQTVCPDGTT 49
```

Search completed: July 8, 2003, 16:27:58 Job time: 27.8462 secs Propionibacterium Mouse neuro-growth Murine protein 1so Mouse T125 (TANGO-Mouse T125 (TANGO-Mouse neuro-growth Mouse neuro-growth Muman beta-defensi Human beta-defensi Human beta-defensi Human beta-defensi Human beta-defensi Human beta-defensi Human beta-defensi

Human ORF3242 pro

Human SAP-3 mature Human beta-defensi

Human beta-defensi Beta-defensin fami

Human SAP-3 pre-pr Human beta-defensi

Transplant media a Transplant media a Human beta-defensi

2 glutamicum prote Alpha-catenin 10.3 Human transcriptio

Orosophila melanog

Human ORFX protein Arabidopsis thalla

Propionibacterium

Propionibacterium Human polypeptide

```
AA017766
AA009708
AAB10600
                                                                                                                                                                                                                                      AA017767
AAU09709
AAY07244
                                                                                                                                                                   AA017773
AA017781
                                                                                                            AAE21081
AAW88392
                                                                                                                                                                                                                                                                                                          AAU91016
AAW85475
                            ABP34269
                                                                                                                                                                                                                                                                              AAB10602
                                                                                                                                                                                                                                                                                                                          AAU91036
                                                                                                                                                                                                                                                                                                                                                                                                                                     AAU56641
                                                                                                                                                     AA017774
                                                                                                                                                                                                                                                                                              AA017
                                                                                                                                                                               8, 2003, 16:08:55 ; Search time 35 Seconds (without alignments) 53.300 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                    | SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1980.DAT:*
| SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1981.DAT:*
| SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1981.DAT:*
| SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1983.DAT:*
| SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1984.DAT:*
| SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1985.DAT:*
| SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1985.DAT:*
| SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1986.DAT:*
| SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1989.DAT:*
| SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1989.DAT:*
| SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1999.DAT:*
| SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1991.DAT:*
| SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1991.DAT:*
| SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1991.DAT:*
| SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1991.DAT:*
| SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1991.DAT:*
| SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1991.DAT:*
                                                                                                                                                                                                                                                                                 908470
              GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                             Potal number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                    908470 seqs, 133250620 residues
                                                                                                                                                                                                                                                                                                                                                  Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                    OM protein - protein search, using sw model
                                                                                                                                                                                                          BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                   US-09-824-647-5
73
1 SARGTKCLRKKIPR 14
                                                                                                                                                                                                                                                                                                                                                                                                         A_Geneseq_101002:*
                                                                                                                                                                                                                                                                                                          Minimum DB seq length: 0
Maximum DB seq length: 200000000
```

Scoring table:

Searched:

Database :

Perfect score:

Title:

Run on:

Sequence:

#### ALIGNMENTS

.DAT:\*

AAR46723

GP88; granulin; epithilin; mouse; growth factor; autocrine; tumour; cancer; viral infection; antagonist; therapy; diagnosis; antigen; Mouse GP88 autocrine growth factor antigenic peptide S14R. AAW85479 standard; Peptide; 14 AA. 970S-0991862. 970S-0863079. 98WO-US10555 (first entry) (SERR/) SERRERO G. 16-DEC-1997; W09852607-A1. 22-MAY-1998; 23-MAY-1997; 15-MAR-1999 26-NOV-1998 Serrero G; antibody. AAW85479; Mus sp. RESULT 1 

Composition containing antagonist of growth factor GP88 - useful for treating cancer and viral diseases and also for diagnosing disease

WPI; 1999-045276/04.

Mouse granulin/epi Rat epithelin prec Human protein sequ Human epithelin pr Human cancer assoc

AAE20520 AAR14325 AAB94550 AAR14326 AAB43971 AAW85481

14 589 589 589 589 589 621 621 621

100.0

Human GP88 autocri

Granulin sequence

Mouse epithelin pr Mouse GP88 autocri

Mouse GP88 autocri

AAW85479 AAW85474

四四

Query Match Length

Score

Result ٠ ي

Description

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

/SIDS2/gcgdata/geneseq/geneseqp-embl/AA2000.DAT:\* /SIDS2/gcgdata/geneseq/geneseqp-embl/AA2001.DAT:\* /SIDS2/gcgdata/geneseq/geneseqp-embl/AA2002.DAT:\* /SIDS2/gcgdata/geneseg/genesegp-embl/AA1998 . /SIDS2/gcgdata/geneseg/genesegp-embl/AA1999 .

/SIDS2/gcgdata/geneseq/geneseqp-embl/Aa1994./SIDS2/gcgdata/geneseq/geneseqp-embl/Aa1995./SIDS2/gcgdata/geneseq/geneseqp-embl/Aa1996./SIDS2/gcgdata/geneseq/geneseqp-embl/Aa1996./SIDS2/gcgdata/geneseq/geneseqp-embl/Aa1997.

```
90US-0504508.
                                                   (BRIM ) BRISTOL-MYERS SQUIB.
            91US-0083796
                                                                         Shoyab M. ' Plowman GD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Misc-difference 377
                                                                                                                                                                                                                                                                                                                               589 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO9852607-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             22-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      16-DEC-1997;
23-MAY-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15-MAR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   26-NOV-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAW85474;
                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ds snw
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAW85474
  ð
                                                This is the amino acid sequence of peptide S14R, comprising amino acid residues S56-R575 of murine GP88 (see AAM85474) GF88 is an kDa glycoprotein autocrine growth factor that is expressed in a tightly regulated manner in normal cells, is overexpressed and unregulated in highly tumorigenic cells derived from normal cells, and which acts as a stringently required growth stimulator for the tumorigenic cells. S14R was used to raise neutralising antibodies to GP88. Antagonists to GP88, such as anti-GP88 antibodies, are used to treat diseases associated with increased expression of
                                                                                                                                                                    GP88, particularly cancer but also viral infections. Anti-GP88 antibodies can also be used as diagnostic reagents and to deliver toxins or other compounds to GP88-expressing cells.
                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                               Length 14;
                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                               100.0%; Score 73; DB 20;
100.0%; Pred No. 2.4e-06;
11ve 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ET; growth regulation; inhibition; stimulation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note-
280..335
/label EP-1
'~^^e "claim 22, page 55"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            205..261
/label= EP-2
/note= "claim 23, page 55"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /label= EP
/note= "claim 25, page 55"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /label= EP
/note= "claim 27, page 56"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /label= precursor
/note= "claim 21, page 55"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "claim 24, page 55"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /label- EP
/note- "claim 28, page 56"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /label- EP
/note- "claim 26, page 56"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
1..589
                                                                                                                                                                                                                                                                                                                                                                                              AAR14327 standard; Protein; 589 AA.
                         Example 8; Page 45; 86pp; English.
from altered GP88 expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   91WO-US02321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /label= EP
                                                                                                                                                                                                                                                                                                                  1 SARGTKCLRKKIPR 14
                                                                                                                                                                                                                                                                                                    1 SARGTKCLRKKIPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mouse epithelin precursor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .570
                                                                                                                                                                                                                                                                          14; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .416
                                                                                                                                                                                                                                                              Best Local Similarity
                                                                                                                                                                                                                        14 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                17-JAN-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  03-APR-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO9115510-A:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         17-0CT-1991
                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                         AAR14327;
                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Peptide
                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                    RESULT 2
AAR14327
ID AAR
                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                     ð
```

```
ET-1 is a bifunctional growth regulator, capable of stimulating the growth of some cell types while inhibiting the growth of others. ET-2 is functionally similar to ET-1 w.r.t. growth inhibitory bioactivity. "In contrast, however. ET-2 is apparently not capable of eliciting the growth stimulatory activity characteristic of ET-1 and, in fact, antegonises this ET-1 activity characteristic of ET-1 and, see also AAQ14338-40, AAQ14952-53, AAR14328-9 and AAR15315-20.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GP88; granulin; epithilin; mouse; growth factor; autocrine; tumour; cancer; viral infection; antagonist; therapy; diagnosis.
                                                                                New cysteine-rich growth modulating proteins, epithelins - useful as inhibitors of neoplastic cell growth and to promote wound healing and treat psoriasis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  344..362
/note= "K19T peptide, used to raise antibody"
562..575
/note= "S14R peptide, used to raise antibody"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          208..219
/note= "P12T peptide used to raise antibody"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 100.0%; Score 73; DB 12;
100.0%; Pred. No. 9.8e-05;
Live 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note- "encoded by AGC"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note- "encoded by TGA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    'note- "encoded by CTG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mouse GP88 autocrine growth factor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAW85474 standard; Protein; 589 AA.
                                                                                                                                                                                                    Disclosure; Fig 23; 97pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  98WO-US10555.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       970S-0991862.
970S-0863079.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SARGTKCLRKKIPR 575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 SARGTKCLRKKIPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity 100.
Matches 14; Conservative
WPI; 1991-325168/44.
N-PSDB; AAQ14340.
```

us-09-824-647-5.rag

```
/label= EP-2
/note= "claim 13, page 54"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note-
280..335
/label- EP-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /label= precursor
/note= "claim 11,
                                                                                                                                                                                                      Disclosure; Fig 8; 50pp; English
                     15-JUN-2001; 2001US-0880842
                                           970S-0863079.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              111111111111111
562 SARGTKCLRKKIPR 575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 59..114
/label= EP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 SARGIKCLRKKIPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           17-JAN-1992 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity 100..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Rat epithelin precursor.
                                                                                                                          WPI; 2002-267529/31.
                                                                                                                                                                                                                                                                                                                                                                                                                589 AA;
                                                                             SERR/) SERRERO G.
                                                                                                                                      N-PSDB; AAD32849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rattus rattus.
                                           23-MAY-1997;
08-DEC-1999;
28-FEB-2002
                                                                                                   Serrero G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAR14325;
                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                           protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 5
 ò
                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                      This is the amino acid sequence of murine GP88, an 88 kDa glycoprotein autocrine growth factor and epithilin/granulin c precursor that is expressed in a tightly regulated manner in normal cells, is overexpressed and unregulated in highly tumorigenic cells derived from normal scells, and which acts as a stringently required c growth stimulator for the tumorigenic cells. Inhibition of GP88 c expression or action in the tumorigenic cells results in an inhibition of the tumorigenic properties of the overproducing cills. Murine GP88 cDNA (see AAV82824) was obtained from the highly tumorigenic C cell line. Antagonists to GP88 are used to treat diseases associated with increased expression of GP88, particularly cancer but also viral infections. Fragments of GP88 are used to reserve the authorides (used as antagonists, as diagnostic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mouse; granulin precursor; GP88; cytostatic; tumourigenicity; tamoxifen; antineoplastic; antioestrogen therapy; skin cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                         Composition containing antagonist of growth factor GP88 - useful for treating cancer and viral diseases and also for diagnosing disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           note= "Regions used as antigens to raise ant1-GP88
intibodies"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 562..575
/note= "Regions used as antigens to raise anti-GP88
                                                                                                                                                                                                                                                                                                                     expressing cells) and to screen for antibodies. Methods are provided for diagnosing disease, or determining susceptibility disease, resulting from altered GP88 activity.
                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                             reagents and for delivering toxins or other compounds to GP88-
                                                                                                                                                                                                                                                                                                                                                                                       100.0%; Score 73; DB 20; Length 589; 100.0%; Pred. No. 9.8e-05; Live 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mouse granulin/epithelin precursor (GP88) protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note- "Encoded by ACA'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /label= Unknown
/note= "Encoded by ATG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAE20520 standard; Protein; 589 AA.
                                                                                                                                      Example 5; Fig 8A-D; 86pp; English
                                                                                                               from altered GP88 expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    antibodies"
586
                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 SARGTKCLRKKIPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               344..362
                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                      WPI; 1999-045276/04.
                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity
nes 14; Conserv
                                                                                                                                                                                                                                                                                                                                                                    589 AA;
           (SERR/) SERRERO G.
                                                                  N-PSDB; AAV82824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US2002025543-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-JUL-2002
                                  Serrero G;
                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAE20520;
                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mus sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Region
                                                                                                                                                                                                                                                                                                                                                                                                     Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAE20520
                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
```

```
The invention relates to a method for diagnosing tumourigenicity in a human. The method comprises obtaining a biological sample containing cells from the patient, detecting GPBB in the cells of the sample, and determining the number of GPBB positive cells in the sample, and determining the ratio of GPBB positive cells to the total number of cells. In the sample. The invention also relates to a method for determining if a human patient is resistant to the antinoplastic effects of tumourigenicity in a sample, such as blood, serum, plasma, urine, nipple apprate, cerebrospinal fluid, liver, kidney, breast, bone, brain, lung, colon, or skin cancer. The method can be used to treat or prevent re-occurrence of cancer in a patient, by administering tamoxifen if the sample contains less than 10 % GPBB, or less than 5 % GPBB positive cells. The present sequence is mouse granulin/epithelin precursor (GPBB)
comprising obtaining a cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100.0%; Score 73; DB 23;
100.0%; Pred. No. 9.8e-05;
ive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ET; growth regulation; inhibition; stimulation
        Diagnosing tumorigenicity in a human, com sample, detecting GP88 in the cells, and positive cells in the sample
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAR14325 standard; Protein; 589 AA.
```

Peptide

Peptide

Peptide

Peptide

03-APR-1991; 13-MAR-1991; 03-APR-1990;

17-0CT-1991. WO9115510-A.

```
polynucleotide which comprises a 3'-end sequence, where the coligonucleotide comprises at least 15 nucleotides and the combination of the 5'-end sequence/3'-end sequence is selected from those defined in the specification. The primer sets can be used in antisense therapy and in gene therapy. The primers are useful for synthesising polynucleotides, particularly full-length cDNAs. The primers are also useful for the detection and/or diagnosis of the abnormality of the proteins encoded by the full-length cDNAs. The primers allow obtaining of the full-length cDNAs easily without any specialised methods. AAH03166 to AAH13628 and AAH13631 to AAH18742 represent human cDNA sequences; AAB92446.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The present invertion describes primer sets for synthesising 5602 full-length cDNAs defined in the specification. Where a primer set comprises: (a) an oligoral primer and an oligonucleotide complementary to the complementary strand of a polynucleotide which comprises one of the 5602 nucleotide sequences defined in the specification, where the oligonucleotide comprises at least 15 nucleotides; or (b) a combination of an oligonucleotide comprising a sequence complementary to the complementary strand of a polynucleotide which comprises a 5'-end sequence and an oligonucleotide comprising a sequence complementary to a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAB95893 represent human amino acid sequences; and AAH13629 to AAH13632 represent oligonucleotides, all of which are used in the exemplification
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Primer sets for synthesizing polynucleotides, particularly the 5602 full-length colls defined in the specification, and for the detection and/or diagnosts of the abnormality of the proteins encoded by the full-length colls.
                                                                                                                                                                                                                                                                                                Isogai T, Nishikawa T, Hayashi K, Saito K, Yamamoto J;
Sugiyama T, Wakamatsu A, Nagai K, Otsuki T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 58; DB 22; Length 413;
Pred. No. 0.035;
3; Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 8; SEQ ID 15310; 2537pp + CD ROM; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ET; growth regulation; inhibition; stimulation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAR14326 standard; Protein; 593 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       79.5%;
71.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28-JUL-2000; 2000EP-0116126.
                                                                                           99JP-0300253
2000JP-0118776
                                                                                                                                                                                 09-JUN-2000; 2000JP-0241899
                                                                                                                                                       2000JP-0183767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 SARGTKCLRKKIPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local Similarity 71.4
Matches 10; Conservative
                                                                                                                                                                                                                                             (HELI-) HELIX RES INST.
                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2001-318749/34.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  17-JAN-1992
                                                                                        27-AUG-1999;
11-JAN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens
                                                                                                                                                       02-MAY-2000;
                                                                                                                                                                                                                                                                                                                                      Ishii S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAR14326;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Protein
                                                                                                                                                                                                                                                                                                      Ota T,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             bloactivity. In contrast, however, ET-2 is apparently not capable of eliciting the growth stimulatory activity characteristic of ET-1 and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ET-1 is a bifunctional growth regulator, capable of stimulating
the growth of some cell types while inhibiting the growth of others.
ET-2 is functionally similar to ET-1 w.r.t. growth inhibitory
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human; primer; detection; diagnosis; antisense therapy; gene therapy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   New cysteine-rich growth modulating proteins, epithelins - useful as inhibitors of neoplastic cell growth and to promote wound healing and treat psoriasis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         in fact, antagonises this ET-1 activity.
See also AAQ14338-40, AAQ14952-53, AAR14328-9 and AAR15315-20.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 65; DB 12; Length 58
Pred. No. 0.0027;
1; Mismatches 1; Indels
      /note
123.179
/label- BP
/ ---- "claim 15, page 54"
                                                                                                                                 /bz...../
/label- EP
/mate- "claim 16, page 54"
   "claim 14, page 54"
                                                                                                                                                                                                                                                                             54"
                                                                                                                                                                                                                                                                                                                                      /label= EP
/note= "claim 18, page 55"
                                                                                                                                                                                                                                          /label- EP
/note= "claim 17, page
515..570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human protein sequence SEQ ID NO:15310.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAB94550 standard; Protein; 413 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Disclosure; Fig 18; 97pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           89.0%;
85.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               91WO-US02321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            91US-0083796
90US-0504508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (BRIM ) BRISTOL-MYERS SQUIB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 SARGTKCLRKKIPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 89.0
Best Local Similarity 85.7
Matches 12; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Shoyab M, Plowman GD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 1991-325168/44.
N-PSDB; AAQ14338.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     589 AA;
```

Gaps

ö

EP1074617-A2 Homo sapiens

07-FEB-2001.

26-JUN-2001

AAB94550;

AAB94550 RESULT

562

ð 셤

Sequence

```
antidiabetic; antiasthmatic; antimerary; immunousculour; antidiabetic; antiasthmatic; antialery; intidiabetic; antiasthmatic; antialery; antiantitic; antidiabetic; antiasthmatic; antiallery; antibacterial; antiviral; dermatological; neuroprofective; cardiant; thrombolyfic; coagulant; nootropic; antipsoriate and antianglogenic. The polynucleotides and polypeptides can be used for preventing, treating or meliorating medical conditions and diagnosing pathological conditions. Polynucleotides, polypeptides, antibodies, agonists and antagonists from the present invention may be used to treat immune disorders by activating or inhibiting the proliferation, differentiation or mobilisation of immune cells, to treat disorders of haematopoletic cells, autolmmune disorders, allergic reactions, graft versus host disease and organ rejection, modulate haemostatic or thrombolytic activity, modulate

inflammation, cancers, cardiovascular disorders, neurological disease and bacterial or viral infections. The peptides, nucleotides, antibodies, agonists and antagonists may be also be used in the exemplification of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAC77607 to AAC78448 encode the human cancer associated proteins given in AAB43398 to AAB44239. The proteins can have activities based on the tissues and cells the genes are expressed in. Example of activities
                                            diagnosis; cytostatic; proliferative; vulnerary; immunomodulator; antidiabetic; antiasthmatic; antrheumatic; antiarthritic; antiviral; antidiammatory; antityroid; antiallergic; antibacterial; cardiant; dermatological; neuroprotective; thrombolytic; coagulant; nootropic; vasotropic; antipsoriatic; antiangiogenic; gene therapy; inflammation; immune disorder; haematopoietic cell disorder; autoimmune disorder; haematopoietic cell disorder; autoimmune disorder; haematopoietic call disorder; autoimmune disorder; haemostatic; cardiovascular disorder; infection; neurological disease; drug screening.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Novel isolated nucleic acids comprising sequences encoding peptides useful for treating or diagnosing e.g. cancer -
                         cancer associated gene; cancer antigen; detection; cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Include: cytostatic; proliferative; vulnerary; immunomodulator;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 58; DB 21; Length 621;
pred. No. 0.052;
3; Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 11; Page 2094-2096; 2352pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAW85481 standard; Peptide; 14 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (HUMA-) HUMAN GENOME SCI INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   79.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              08-MAR-2000; 2000WO-US05882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       . 99US-0124270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 SARGTKCLRKKIPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 79.5
Best Local Similarity 71.4
Matches 10; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rosen CA, Ruben SM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2000-587533/55.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          N-PSDB; AAC78180.
                                                                                                                                                                                                                                                                                                                                                                                                                          WO200055350-A1.
                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       12-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21-SEP-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAW85481;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAW85481
NAMES OF COLOR OF STATES O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   the growth of some cell types while inhibiting the growth of others. growth of some cell types while inhibiting the growth of others. It is functionally similar to ET-1 w.r.t. growth inhibitory bloactivity. In contrast, however, ET-2 is apparently not capable of eliciting the growth stimulatory activity characteristic of ET-1 and, in fact, antagonises this ET-1 activity. See also AAQ14318-40, AAQ14952-53, AAR14328-9 and AAR15315-20.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     New cysteine-rich growth modulating proteins, epithelins - useful as inhibitors of neoplastic cell growth and to promote wound healing and treat psoriasis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 58; DB 12; Length 593;
Pred. No. 0.05;
3; Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human cancer associated protein sequence SEQ ID NO:1416.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note= "claim 8, page 55"
                                                                                        53
                                                                                                                                                                             53
                                                                                                                                                                                                                                                                                                                                                                                                                                                         53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              534
                                                                                                                                                                                                                                                                     "claim 4, page 53"
                                                                                                                                                                                                                                                                                                                                                              page 53
"claim 1, page
                                                                                                                                                                             claim 3, page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAB43971 standard; Protein; 621 AA
                                                                                                                                                                                                                                                                        note-
24..180
/label= EP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Disclosure; Fig 22; 97pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                          label EP
note "claim 6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           note- "claim 7,
                                                                                     claim 2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .;
;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           79.5%;
|larity 71.4%;
|Conservative
                                                                                                                                                 label- EP-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   910S-0083796.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (BRIM ) BRISTOL-MYERS SQUIB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EΡ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 SARGTKCLRKKIPR 14
                                                                                                                                                                                                                                         label- EP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  label- EP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     . 497
                                                                                                                                                                                   note-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Shoyab M, Plowman GD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 1991-325168/44.
N-PSDB; AAQ14339.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
Matches 10; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  593 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       03-APR-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   13-MAR-1991;
03-APR-1990;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           08-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO9115510-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           17-0CT-1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAB43971;
                            Protein
                                                                                                                 Protein
                                                                                                                                                                                                         Peptide
                                                                                                                                                                                                                                                                                                  Peptide
                                                                                                                                                                                                                                                                                                                                                                                          Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAB43971
```

ö

0; Gaps

EXEXEXE Execute

a

26-NOV-1998

antibody.

GP88;

Serrero G;

```
GP88; granulin; epithilin; human; growth factor; autocrine; tumour;
cancer; viral infection; antagonist; therapy; diagnosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The granulin inhibits keratinocytes and is useful in formulations for promoting the healing of wounds.
                                                                                                                                                                                                                                                                                                                                                                                                                                   New cystine riph granulin peptide(s) from leucocyte(s) - are keratinocyte inhibitors useful topically for wound healing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        340..364
/note= "E19V peptide used to raise antibody"
566..579
/note= "A14R peptide used to raise antibody"
                                                             /note= "Glycine encoded by CAG."
/note= "Valine encoded by ATG."
539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 53; DB 14;
Pred. No. 0.4;
2; Mismatches 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Disclosure; Figure 4c; 53pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAW85475 standard; Protein; 593 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human GP88 autocrine growth factor.
                                                                                                                                                                                         92WO-CA00089.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 72.6%;
Best Local Similarity 75.0%;
Matches 9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         98WO-US10555.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  97US-0991862.
97US-0863079.
                                                                                                                                                                                                                                       92US-0829233.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     568 RGTKCLRREAPR 579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3 RGTKCLRKKIPR 14
                                                                                                                                                                                                                                                                                                                                                                      WPI; 1993-320328/40.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 1999-045276/04
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      e,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    593 AA;
                                                                                                                                                                                                                                                                                  (SOLO/) SOLOMON S.
                                                                                                                                                                                                                                                                                                                                                                                               N-PSDB; AAQ49052
                                           Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (SERR/) SERRERO
                                                                                                                                                                                                                                       03-FEB-1992a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WO9852607-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         22-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  16-DEC-1997;
23-MAY-1997;
                                                                                                                                                                                            28-FEB-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15-MAR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              26-NOV-1998
                                                                                                        W09315195-A.
                                                                                                                                                   05-AUG-1993,
                                                                                                                                                                                                                                                                                                                             Solomon S;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Serrero G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAW85475;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Key
Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAW85475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              XXXXXXX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This is the amino acid sequence of peptide A14R, comprising amino acid residues A566-R579 of human GP08 (see AAM85475). GP08 is an 88 kba glycoprotein autocrine growth factor that is expressed in a tightly regulated manner in normal cells, is overexpressed and unregulated in highly tumorigenic cells derived from normal cells, and which acts as a stringently required growth stimulator for the tumorigenic cells. A14R was used in an attempt to raise neutralising antibodies to GP08 (see also AAW85480). Antagonists to GP08, such as anti-GP08 antibodies, are used to treat diseases associated with increased expression of GP08, particularly cancer but also viral infections. Anti-GP08 antibodies can also be used a diagnostic reagents and to deliver toxins or other compounds to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Composition containing antagonist of growth factor GPBB - useful for treating cancer and viral diseases and also for diagnosing disease from altered GPBB expression
                                                                                                        ranulin; epithilin; human; growth factor; autocrine; tumour; viral infection; antagonist; therapy; diagnosis; antigen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Granulin; keratinocytes; wound healing; inhibition; peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 14;
                                                             Human GP88 autocrine growth factor antigenic peptide A14R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 53; DB 20;
Pred. No. 0.0098;
2; Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Key Location/Qualifiers
Misc-difference 452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAR48673 standard; Protein; 593 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Example 8; Page 45; 86pp; English.
                                                                                                                                                                                                                                                                                                                             98WO-US10555.
                                                                                                                                                                                                                                                                                                                                                                      97US-0991862,
97US-0863079.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity 75.u.,
Best Local Similarity 75.u.,
                    15-MAR-1999 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    22-APR-1994 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 granulocytes; leucocytes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3 RGTKCLRKKIPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GP88-expressing cells.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 1999-045276/04.
                                                                                                                                                                                                                                                                                                                                                                                                                                       (SERR/) SERRERO G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Granulin sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              14 AA;
                                                                                                          granulin;
                                                                                                                                                                                                Homo sapiens.
                                                                                                                                                                                                                                       WO9852607-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                      16-DEC-1997;
23-MAY-1997;
                                                                                                                                                                                                                                                                                                                             22-MAY-1998;
```

Sequence

AAR48673;

RESULT 10 AAR4867

셤

à

ö

Gaps

ö

ï

Length 593; Indels

```
WPI; 2002-106200/14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Leach MD,
                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                         ABP34269;
                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                         protein.
                                                                                                                                                                                                                                                                                                                                                               RESULT 13
                                                                                                                                                                                                                                                                                                                                                                           ABP34269
                                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human; granulin precursor; GP88; cytostatic; tumourigenicity; tamoxifen; antineoplastic; antioestrogen therapy; skin cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note= "Region used as antigen to develop anti-human
                                                                                                                                                                                                                                                                                                              Gaps
                     Composition containing antagonist of growth factor GP88 - useful for treating cancer and viral diseases and also for diagnosing disease from altered GP88 expression
                                                                                                                          derived from normal cells, and which acts as stringently required growth stimulator for the tumorigenic cells. Inhibition of GP88 expression or action in the tumorigenic cells results in an inhibition of the tumorigenic properties of the overproducing cells. Antagonists to GP88 are used to treat diseases associated
                                                                                             glycoprotein autocrine growth factor and epithilin/granulin precursor that is expressed in a tightly regulated manner in normal cells, is overexpressed and unregulated in highly tumorigenic cells
                                                                                                                                                                                                             delivering toxins or other compounds to GP88-expressing cells) and to screen for antibodies. Methods are provided for diagnosing disease, or determining susceptibility to disease, resulting from
                                                                                                                                                                    cells. Antagonists to GPBB are used to treat diseases associated with increased expression of GPBB, particularly cancer but also viral infections. Fragments of GPBB are used to raise specific antibodies (used as antagonists, as diagnostic reagents and for
                                                                                                                                                                                                                                                                                        Score 53; DB 20; Length 593; Pred. No. 0.4;
                                                                                                                                                                                                                                                                                                             1; Indels
                                                                                   an 88 kDa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human granulin/epithelin precursor (GP88) protein.
                                                                                   This is the amino acid sequence of human GP88,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GP88 neutralising antibody
                                                                                                                                                                                                                                                                                                             2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    'note= "Encoded by AAG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                         AAE20521 standard; Protein; 593 AA.
                                                              Example 5; Fig 9A; 86pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        970S-0863079.
990S-0456886.
                                                                                                                                                                                                                                                                                        72.6%;
75.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   15-JUN-2001; 2001US-0880842.
                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity 75.00,
                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                             568 RGTKCLRREAPR 579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                346..364
                                                                                                                                                                                                                                                                                                                                  3 RGTKCLRKKIPR 14
                                                                                                                                                                                                                                             altered GP88 activity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 2002-267529/31.
N-PSDB; AAD32850.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (SERR/) SERRERO G.
                                                                                                                                                                                                                                                                  593 AA;
N-PSDB; AAV82825.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US2002025543-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         23-MAY-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   08-DEC-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-JUL-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               28-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Serrero G;
                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                              AAE20521;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Region
                                                                                                                                                                                                                                                                                                                                                                                      RESULT 12
 셤
                                                                                                                                                                                                                                                                                                                                  ð
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                cells
                                                                                                                                                                                                                                                              human. The method comprises obtaining a biological sample containing cells from the patient, detecting GP88 in the cells of the sample, and determining the number of GP88 positive cells in the sample, and determining the number of GP88 positive cells to the total number of cells in the sample. The invention also relates to a method for determining if a human patient is resistant to the antineoplastic effects of antioestrogen therapy. The method is useful for diagnosing union applicate, cerebrospinal fluid, liver, kidney, breast, bone, brain, lung, colon, or skin cancer. The method can be used to treat or prevent re-occurrence of cancer in a patient, by administaring tamoxifen if the sample contains less than 10 % GP88, or less than 5 % GP88 positive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human; ORF; open reading frame; ORFX; drug screening; diagnosis; disease monitoring; cytokine; cell proliferation; cell differentiation; diamone modulation; hamantopodesis regulation; tissue growth, anglogenesis; activin; inhibin; chemotactic; chemokinetic; haemostatic; thrombolytic; tumour inhibition; bodily characteristic; fertility; behaviour; cancer; proliferative disorder; neurological disorder; cardiovascular disease; immune system disorder; organ transplantation; tissue growth disorder; tissue regeneration disorder; diabetes mellitus; hypothyroidism; cholesterol ester storage disease; infection; vulnerary; vasotropic; antipsoriatic; antidiabetic; cytostatic; noctropic; cardiant; hypotensive; antichirolamatory; immunomodulator;
Diagnosing tumorigenicity in a human, comprising obtaining a cell sample, detecting GPB8 in the cells, and determining the number of GPB8 positive cells in the sample –
                                                                                                                                                                                                                                      The invention relates to a method for diagnosing tumourigenticity in a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cardiant; hypotensive; antithyroid; antiinflammatory; immunom
dermatological; analgesic; virucide; antibacterial; fungicide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 23; Length 593;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          72.6%; Score 53; DB 2
75.0%; Pred. No. 0.4;
11ve 2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Human ORF3242 protein, SEQ ID NO:6484.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ABP34269 standard; Protein; 51 AA.
                                                                                                                                                             Disclosure; Fig 9B; 50pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  24-MAY-2001; 2001WO-US17076.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   24-MAY-2000; 2000US-206690P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1111111:: 11
568 RGTKCLRREAPR 579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Similarity 75.0
Matches 9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3 RGTKCLRKKIPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CURA-) CURAGEN CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         593 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO200190366-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        08-JUL-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             29-NOV-2001.
```

```
Sequences ABP31028-ABP35561 represent 4534 novel human proteins

ABN79587 represent convaints and sequences ABN75054-
ABN79587 represent convaints concompasses
polypeptides at least 80% identical to the ORFI-ORF4534 (collectively
referred to as ORFX) proteins, polynucleotides at least 85% identical to
referred to as ORFX) proteins, polynucleotides at least 85% identical to
referred to as ORFX) proteins, proteins, antibodies
polynucleotides, the recombinant production of ORFX proteins, antibodies
pecific for ORFX proteins, methods of detecting ORFX expression or
polypeptides, methods of screening for modulators of ORFX expression or
certivity, and methods of screening individuals for a predisposition to an
ORFX-associated disorder. The ORFX proteins of the invention have a wide
range of biological activities, such as cytokine, cell proliferation,
tissue growth, anglogenesis, activino, haematopolesis regulation,
tissue growth, anglogenesis, activity, thrombolytic activity,
receptor/ligand, antiniflammatory activity, thrombolytic activity,
receptor/ligand, antiniflammatory activity, thrombolytic activity,
and antilifective activity, and may also be involved in the determination
of bodily characteristics, fertility and behaviour. ORFX proteins,
oncleic acids and antibodies may be used in the treatment of cancers,
conterproviour activity and performance and antibodies may be used in the treatment of cancers,
conterproviour activity and penalour.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   neurological disorders such as epilepsy and Alzheimer's disease, cardiovascular diseases, immune system disorders, disorders related to cardiovascular diseases, immune system disorders, disorders related to disorders of tissue growth and regeneration, diseases such as diabetes mellitus, hypothyroidism, and cholesterol ester storage disease, and infectious diseases caused by viral, bacterial, fingal and other pathogens. ORFX nucleic acids may also be used as a source of primers and probes, in the detection of ORFX genomic sequences or transcripts, in the identification and cloning of homologous sequences, in genetic diagnosis, and in forensic biology. The ORFX nucleic acids may additionally be used to produce transgenic animals which may be useful for studying the function and/or activity of ORFX protein, and in drug screening. The ORFX proteins may also be used as immunogens to generate specific antibodies, which are useful in the
                                                                                                                   Novel human polypeptides and polynucleotides useful for diagnosing, preventing and treating cardiovascular disease, neurodegenerative, hyperproliferative disorders and disorders related to organ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   diagnosis, treatment and monitoring of ORFX-associated diseases
                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 10; Page 1869; 2508pp; English.
N-PSDB; ABN78295.
                                                                                                                                                                                                                                                                                                                                transplantation
```

0; Gaps Score 43; DB 23; Length 51; Pred. No. 2.2; 0; Mismatches 2; Indels 58.9%; 80.0%; Ouery Match
Best Local Similarity 80.uv,
Best Local Similarity 80.uv, 51 AA; Sequence 

ö

ö

4 GTKCLRKKIP 13 ||||| ||| GTKCLHLKIP 47 38

g

ð

AAU47116 standard; Protein; 76 AA. AAU47116; RESULT 14 AAU47116 

(first entry) 13-FEB-2002 Propionibacterium acnes immunogenic protein #8012.

SAPHO syndrome; synovitis; acne; pustulosis; hypertosis; osteomyelitis; uveitis; endophthalmitis; bone; joint; central nervous system; ELISA; inflammatory lesion; acne vulgaris; enzyme linked immunosorbent assay; dermatological; osteopathic; neuroprotectant.

SAPHO syndrome; synovitis; acne; pustulosis; hypertosis; osteomyelitis; uveitis; endophthalmitis; bone; joint; central nervous system; ELISA; inflammatory lesion; acne vulgaris; enzyme linked immunosorbent assay;

dermatological; osteopathic; neuroprotectant.

Propionibacterium acnes

WO200181581-A2

Propionibacterium acnes immunogenic protein #2760.

13-FEB-2002 (first entry)

AAU41864;

AAU41864 standard; Protein; 85 AA.

Propionibacterium acnes.

WO200181581-A2.

```
Sequences AAU39105-AAU68017 represent Propionibacterium acnes immunogenic polvpeptides. The proteins and their associated DNA sequences are used in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 enzyme linked immunosorbent assay (ELISA).
Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                  polypeptides. The proteins and their associated DNA sequences are used in the treatment, prevention and diagnosis of medical conditions caused by a cares. The disorders include SAPHO syndrome (synovitis, ance, pustulosis, hypertosis and osteomyelitis), uveitis and endophthalmitis. P. acnes is also involved in infections of bone, joints and the central nervous system, however it is particularly involved in the inflammatory lesions associated with acne vulgaris. A method for detecting the presence or absence of P. acnes in a patient comprises contacting a sample with a binding agent that binds to the proteins of the invention and determining the amount of bound protein in the sample. The polypeptides may be used as antigens in the production of antibodies specific for P. acnes proteins. These antibodies can be used to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            downrequiate expression and activity of P. acnes polypeptides and
therefore treat P. acnes infections. The antibodies may also be used
diagnostic agents for determining P. acnes presence, for example, by
                                                                                                                                                                                                                                                                                                                Propionibacterium acnes polypeptides and nucleic acids useful for vaccinating against and diagnosing infections, especially useful for treating acne vulgaris -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0; Gaps
                                                                                                                                                                                                        Bhatia A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      22; Length 76;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3; Indels
                                                                                                                                                                                                        Wang SS,
                                                                                                                                                                                                                            Carter D;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              at ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                               Example 1; SEQ ID No 8311; 1069pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 40;
Pred. No.
                                                                                                                                                                                                        Mitcham JL,
                                                                                                                                                                                                                        Jen S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    54.8%;
                                                                                      21-APR-2000; 2000US-199047P.
02-JUN-2000; 2000US-208841P.
07-JUL-2000; 2000US-216747P.
                                                     20-APR-2001; 2001WO-US12865
                                                                                                                                                                                                                            L'maisonneuve J, Zhang Y,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity 50...
6; Conservative
                                                                                                                                                                                                        Persing DH,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3 RGTKCLRKKIPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 RGRECERESIPE 12
                                                                                                                                                                                                                                                               WPI; 2001-616774/71.
                                                                                                                                                                   (CORI-) CORIXA CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 76 AA;
                                                                                                                                                                                                                                                                                   N-PSDB; AAS59537
                 01-NOV-2001
                                                                                                                                                                                                        Skeiky YAW,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAU41864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
```

```
Sequences AAU39105-AAU68017 represent Propionibacterium acnes immunogenic the treatment, prevention and diagnosis of medical conditions caused in F. acnes. The disorders include SAHADIS syndrome (synovitis, acne, pustulosis, hypertosis and osteomyelitis), uveltis and endophthalmitis. P. acnes is also involved in infections of bone, joints and the central nervous system, however it is particularly involved in the inflammatory lesions associated with acne vulgaria. A method for detecting the presence or absence of P. acnes in a patient comprises contacting a sample with a binding agent that binds to the proteins of the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            and determining the amount of bound protein in the sample. The polypeptides may be used as antigens in the production of antibodies specific for P. acnes proteins. These antibodies can be used to downregulate expression and activity of P. acnes polypeptides and therefore treat P. acnes infections. The antibodies may also be used as diagnostic agents for determining P. acnes presence, for example, by enzyme linked immunosorbent assay (ELISA).
                                                                                                                                                                                                                                                                                                                                              Propionibacterium acnes polypeptides and nucleic acids useful for vaccinating against and diagnosing infections, especially useful for treating acne vulgaris -
                                                                                                                                                                                                                            J, Wang SS, Bhatla A;
Carter D;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                                                                                                                                                                                                                                             Example 1; SEQ ID No 3059; 1069pp; English.
                                                                                                                                                                                                                            Mitcham JL,
                                                                                                                                                                                                                                             Jen S,
                                                         20-APR-2001; 2001WO-US12865.
                                                                                             21-APR-2000; 2000US-199047P.
02-JUN-2000; 2000US-208841P.
07-JUL-2000; 2000US-216747P.
                                                                                                                                                                                                                                             L'maisonneuve J, Zhang Y,
                                                                                                                                                                                                                          Persing DH,
                                                                                                                                                                                                                                                                                   WPI; 2001-616774/71.
N-PSDB; AASS9515.
                                                                                                                                                                                 (CORI-) CORIXA CORP.
                                                                                                                                                                                                                        Skeiky YAW,
                   01-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
```

0; Gaps

54.8%; Score 40; DB 22; Length 85; 53.8%; Pred. No. 13; Live 2; Mismatches 4; Indels

Query Match
Best Local Similarity 53.8\*
Matches 7; Conservative

Search completed: July 8, 2003, 16:24:15 Job time : 36 secs

```
July 8, 2003, 16:21:00; Search time 8.61539 Seconds (without alignments) 47.812 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                    262574
GenCore version 5.1.6 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                              Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                            262574 seqs, 29422922 residues
                                                                            OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                    BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                        US-09-824-647-5
73
1 SARGTKCLRKKIPR 14
                                                                                                                                                                                          Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                                      Scoring table:
                                                                                                                                                                                                                                                                                                                              Searched:
                                                                                                                  Run on:
```

/cgn2\_6/ptodata/1/laa/5A\_COMB.pep:\*
/cgn2\_6/ptodata/1/laa/5B\_COMB.pep:\*
/cgn2\_6/ptodata/1/laa/6A\_COMB.pep:\*
/cgn2\_6/ptodata/1/laa/6B\_COMB.pep:\*
/cgn2\_6/ptodata/1/laa/pcrUS\_COMB.pep:\*
/cgn2\_6/ptodata/1/laa/pcrUS\_COMB.pep:\*

Listing first 45 summaries

Issued\_Patents\_AA:\*

Database :

Post-processing: Minimum Match 0% Maximum Match 100%

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed and is derived by analysis of the total score distribution.

SUMMARIES

#### Sequence 7, Sequence 17, Sequence 5, Description Sequence 6 Sequence 6 Sequence 6 Sequence Sequence Sequence 4 Sequence Sequence 3 Sequence A Sequence PCT-US91-02321-4 US-08-991-862-7 PCT-US91-02321-US-07-668-648-2 US-08-429-998-2 US-08-431-333-2 JS-07-668-648-4 Query Match Length DB 100.0 Score Result Ş.

GENERAL INFORMATION:
APPLICANT: Shoyab, Mohammed
APPLICANT: Plowman, Gregory D.
TITLE OF INVENTION: BETTHELINS: NOVEL CYSTEINE-RICH GROWTH
TITLE OF INVENTION: HODULATING PROTEINS
NUMBER OF SEQUENCES: 12
CORRESPONDENCE ADDRESS:
ADDRESSE: Pennie & Edmonds
STREET: 1155 Avenue of the Americas
CITY: New York
STATE: New York

Sequence 6, Application US/07668648 Patent No. 5416192

RESULT 2 US-07-668-648-6

		6
APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11 APP11		he
25 22 22 22 22 21 21 22 22	STS	the
sednence sed	INOE	raise ; 0;
anta anta anta anta anta anta anta anta	MTAC	o ra 14;
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	· £	sed to n the ngth 14 Indels
	)R A	p.⊣ Q
	ACTC	0, egg
1.26 1.77 1.77 1.77 1.77 1.70 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.8	E H1	യക മ
395A-2 208C-7 819A-7 646A-7 034-7 034-7 4487-15 421-2 421-2 421-2 4446-6 485-6 867A-6 493A-7 493A-7	ROW 12	00 £
1398 1312 1337 1337 1330 1309 1309 1389 1389 1448 1389 1468 1468	ALIGNMENTS 2 2 GENIC GROW 7991,862 3,862	T 0.0
US-09-398-395A-26 US-08-312-208C-7 US-08-334-818A-7 US-08-336-531-7 US-08-856-334-7 US-08-856-334-7 US-09-309-487-16 US-09-309-487-16 US-09-309-487-16 US-09-30-487-16 US-09-30-487-16 US-08-389-446-6 US-08-389-458-6 US-08-389-458-6 US-08-389-458-6 US-08-389-458-6 US-08-389-458-6 US-08-389-458-6 US-08-389-458-6 US-08-389-458-6 US-08-389-458-6 US-08-389-458-6 US-08-389-458-6 US-08-389-458-6 US-08-389-458-6 US-08-389-458-6 US-08-389-48-6 US-08-389-48-6 US-08-389-48-6 US-08-389-48-6 US-08-389-48-6 US-08-389-48-6 US-08-389-48-6 US-08-389-48-6 US-08-389-48-6 US-08-389-48-6 US-08-389-48-6 US-08-389-48-8	ALI 1GEN 3/99 53,8	peptide o against t inity ste '; Score '; Pred.
	ALIGN 991862 0001-A 0S/08/991, -17 08/863,862	pep aga aga inti
4HH00044444HH0044H4	A US/08991862 US/08991862 US/08991862 US/08 TUMORIG B8/P001-A BER: US/08/198-08-17 US/08/198-08-17 US/08/197-05-23 US/08/2	and personal
5988 41144 1008 3301 4411 4418 723 3327 738	ALIGNMENTS  ULT 1 08-991-862-5 404-662-5 404-662-5 404-662-5 404-662-5 404-662-5 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-662-6 404-6	Mouse granuin  PEPTIDE (1)(1)  RMATION: Internal pepticher and an angeling that the angeling th
•	2 4 6	6 ~ ×1 X-X
44444444444444444444444444444444444444	lica 826 826 FEON FEON ATIO ATIO ATIO BATIO ILD N	mouse gra PEPTIDE (1).(14) RMATION: RMATION: 5 imilarity ; Conser ; Canger
	2-5 6309826 6309826 CORMATIO CORMATIO SECTE TENER DA PPLICATI TELING DA PPLICATI TELING DA PPLICATI TELING DA PPLICATI	MAN
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	ULT 1  6491-862-5  64uence 5, Applicat  atent No. 6309826  ENERAL INFORMATION:  TILLE OF INFORMATION:  TILLE REPRENCE: Z99  CURRENT FILING DATE  EARLIER APPLICATION  CURRENT FILING DATE  EARLIER OF SEQ ID NO  SOFTWARE: PATENTIN  TYPE: PRT	NEGRALSM: mouse gr. NAME/KEY: PEPTIDE NAME/KEY: PEPTIDE OCTORNI (1).(14 OTHER INFORMATION: OTHER INFORMATION: 0 OTHER INFORMATION: 8-991-862-5 ery Match st Local Similarit tches 14; Conset tches 14; Conset 1 SARGTKCL 1 SARGTKCL
	ULT 1 08-991-862 equence 5, atent No. atent No. TITLE REFER CURRENT AP CURRENT AP CURRENT AP CURRENT FI EARLIER FI EARLIER FI EARLIER FI EARLIER FI EARLIER FI EARLIER AP	ORGANISM: NONCAURE: NAME/KEY: NAME/KEY: NOTHER INFO OTHER INFO INFO INFO INFO INFO INFO INFO INFO
22 22 22 22 23 24 24 24 24 24 24 24 24 24 24 24 24 24	RESULT 1 105-08-991-862-5 105-08-991-862-5 Patent No. 6309826 GENERAL INFORMATION: TITLE OF INFERRICE 209 CURRENT FILING DATE: EARLIER APPLICATION: FARLIER PETRICATION: FARLIER PETRICATION: FARLIER POPLICATION: FARLIER POPLICATION: FARLIER POPLICATION: FARLIER POPLICATION: FOUNDER OF SEQ ID NO SOFTWARE: PATENTING DATE: LENGTH: 14 TYPE: PRT	OKGANLSN: M FEATURE: NAME/KEY: P LOCATION: ( OTHER INFOR OTHER INFOR OTHER INFOR OFFI Best Local St Matches 15
	RES S C C C C C C C C C C C C C C C C C C	do yo
•		
	•	

DB 2; Length 589;

0; Mismatches

```
Sequence 6, Application US/08431333
Patent No. 5965723
GENERAL INFORMATION:
APPLICANT: Shoyab, Mohammed
APPLICANT: Plowman, Gregory D.
TITLE OF INVENTION: EPITHELINS: NOVEL CYSTEINE-RICH GROWTH
TITLE OF INVENTION: MODULATING PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/431,333
FILING DATE: 27-APR-1995
CLASSIFICATION: 536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 100.0%; Score 73; DB 2; I Best Local Similarity 100.0%; Pred. No. 6.1e-05; Matches 14; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME: MISTOCK, S. LESIIE
REGISTRATION NUMBER: 18,872
REPERENCE_POCKET NUMBER: 5624-161-999
TELECOMENICATION INFORMATION:
TELEPHONE: (212)790-9090
                                                                                                                                                                                 100.0%; Score 73; 100.0%; Pred. No. (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADDRESSEE: Pennie & Edmonds
STREET: 1155 Avenue of the Americas
CITY: New York
STATE: New YORK
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/668,648
FILING DATE: 13-MAR-1991
ATTORNET/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 2, Application US/08991862; Patent No. 6309826; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         562 SARGIKCLRKKIPR 575
                                                                                                                                                                                                                                                                                                                                            : 589 amino acids
amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEFAX: (212) 869-9741 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LENGIH: 589 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 SARGTKCLRKKIPR 14
                                                                                                                                                                                                                                                                                                            1 SARGTKCLRKKIPR 14
                                                                                                                                                                                 Query Match 100.
Best Local Similarity 100.
Matches 14; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; MOLECULE TYPE: protein US-08-431-333-6
                               ; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-429-998-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NUMBER OF SEQUENCES: 1:
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             amino acid
GY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 5
US-08-991-862-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 4
US-08-431-333-6
   LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  đ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
APPLICANT: Shoyab, Mohammed
APPLICANT: PLOWMEN, GREGORY D.
TITLE OF INVENTION: EPITHELINS: NOVEL CYSTEINE-RICH GROWTH
TITLE OF INVENTION: MODULATING PROTEINS
NUMBER OF SEQUENCES: 12
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
      COUNTRIE ....

2 IP: 10036
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC Compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/668,648
FILING DATE: 19910819
CLASSIFICATION: 514
ATONEX/AGENT INFORMATION:
NAME: MASTOCK, S. Leslie
REGISTRATION NUMBER: 18,872
REPERENCE/DOCKET NUMBER: 5624-161-999
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION OF COMPANION:
TELECOMMUNICATION OF COMPANION OF 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/429,998
FILING DATE: 27-APR-1995
CLASSIFICATION: 514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6.1e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 73; DB
Pred. No. 6.1e
; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STREET: 1155 Avenue of the Americas CITY: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/668,648
FILING DATE: 13-MAR-1991
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
CMMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 6, Application US/08429998
Patent No. 5885961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 100.0%; So
Best Local Similarity 100.0%; Pr
Matches 14; Conservative 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME: Misrock, S. Leslie
REGISTRATION NUMBER: 18,872
REFERENCE/DOCKET NUMBER: 56;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pennie & Edmonds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     : 589 amino acids
AMINO ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TOPOLOGY: linear
MOLECULE TYPE: protein
US-07-668-648-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CITY: New IC...
STATE: New YORK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-08-429-998-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
```

Gaps

Length 589;

```
STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
APPLICANT: Serrero, Ginette
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILLE REFERENCE: 29996.488/P001-A
CURRENT APPLICATION NUMBER: US/08/991,862
CURRENT FILING DATE: 1998-08-17
EARLIER APPLICATION NUMBER: 08/863,862
EARLIER FILING DATE: 1997-05-23
NUMBER OF SEQ ID NOS: 17
SOFTWARE: PATENTIN VET: 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 6, Application PC/TUS9102321
GENERAL INFORMATION:
APPLICANT: Shoyab, Mohammed
APPLICANT: Plowman, Gregory D.
TITLE OF INVENTION: EPITHELINS: NOVEL CYSTEINE-RICH GROWTH
TITLE OF INVENTION: MODULATING PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 589;
                                                                                                                                                                                                                                                                                Length 589;
                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6.1e-05;
                                                                                                                                                                                                                                                                              100.0%; Score 73; DB 4; 100.0%; Pred. No. 6.1e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100.0%; Score 73; DB 5; 100.0%; Pred. No. 6.1e-05
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APFLICANT.
TITLE OF INVENTION: EPITHELING PROTEINS
NUMBER OF SEQUENCES: 12
CORRESPONDENCE ADDRESS:
ADDRESSEE: Bristol-Myers Squibb Company
STREET: 3005 First Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATTORNEY/AGENT INFORMATION:
NAME: Poor, Brian W
REGISTRATION NUMBER: 32,928
REFERENCE/DOCKET NUMBER: 0N0071A-PC
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: PCT/US91/02321
FILING DATE: 19910403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                       ; TYPE: PRT
; ORGANISM: Mouse epithelin/granulin
US-08-991-862-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (206)728-4800
                                                                                                                                                                                                                                                                                                                                                     : 589 amino acids
AMINO ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 SARGTKCLRKKIPR 14
                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity 100.0
Matches 14; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Local Similarity 100.
Matches 14; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TOPOLOGY: linear
MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CITY: Seattle
STATE: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE: 1
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          98121
                                                                                                                                                   SEQ ID NO 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PCT-US91-02321-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PCT-US91-02321-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 6
                                                                                                                                                                                                                                                                                                                                                       õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                        g
```

```
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                    APPLICANT: Shoyab, Mohammed
APPLICANT: Shoyab, Mohammed
APPLICANT: Plowman, Gregory D.
TITLE OF INVENTION: EPITHELINS: NOVEL CYSTEINE-RICH GROWTH
TITLE OF INVENTION: MODULATING PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NOVEL CYSTEINE-RICH GROWTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                 Patentin Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 65; DB 1;
Pred. No. 0.0014;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
APPLICANT: Shoyab, Mohammed
APPLICANT: Shoyab, Mohammed
APPLICANT: Plowman, Gregory D.
TITLE OF INVENTION: BUTHRELING: NOVEL CY
TITLE OF INVENTION: MODULATING PROTEINS
NUMBER OF SEQUENCES: 12
CORRESPONDENCE ADDRESS:
ADDRESSEE: Pennie & Edmonds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SSEE: Pennie & Edmonds
F: 1155 Avenue of the Americas
New York
New York
                                                                                                                                                                        ADDRESSEE: Pennie & Edmonds
STREET: 1155 Avenue of the Americas
CIIY: New York
                                                                                                                                                                                                                                                                                                                                                                                       CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/668,648
FILING DATE: 19910819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                 COMPUTER: IBM PC COMPATIBLE OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-08-429-998-2; Sequence 2, Application US/08429998; Patent No. 5885961
Sequence 2, Application US/07668648 Patent No. 5416192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               18,872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FELECOMMUNICATION INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 89.0%;
Best Local Similarity 85.7%;
Matches 12; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                562 SAKGTKCLRKKTPR 575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM: MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATTORNEY/AGENT INFORMATION:
NAME: Misrock, S. Leslie
REGISTRATION NUMBER: 18,
                                                                                                                                                                                                                                                                                                              Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (212) 869-9741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  : 589 amino acids
AMINO ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 SARGTKCLRKKIPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEFAX: (212) 869-974 INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; MOLECULE TYPE: protein US-07-668-648-2
                                                                                                TITLE OF INVENTION: EP TITLE OF INVENTION: MOI NUMBER OF SEQUENCES: 15 CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OPERATING SYSTEM:
                                                                                                                                                                                                                                      New York
: USA
                                              GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                   CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     USA
                                                                                                                                                                                                                                                                        10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER:
                                                                                                                                                                                                                                      STATE: N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STREET:
```

Length 589;

```
SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Local Similarity
Matches 12; Conserv
                                        Local Similarity
nes 12; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                  CITY: Seattle
STATE: Washingt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             98121
                                                                                                                                                                                                                     CT-US91-02321-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PCT-US91-02321-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-07-668-648-4
                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                   RESULT 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ð
                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 2, Application US/08431333
Patent No. 5965723
GENERAL INFORMATION:
APPLICANT: Shoyab, Mohammed
APPLICANT: Plowman, Gregory D.
TITLE OF INVENTION: EPITHELINS: NOVEL CYSTEINE-RICH GROWTH
TITLE OF INVENTION: MODULATING PROFEINS
NUMBER OF SEQUENCES: 12
CORRESPONDENCE ADDRESS:
Annewscene.
                                                                                                                                                                                                                                                                                                                                                                                                                Score 65; DB 2; Length 589;
Pred. No. 0.0014;
1; Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPOTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: TBM FO Compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PATENTIN Release #1.0, Version #1.25
SOFTWRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/431,333
FILING DATE: 27-APR-1995
CLASSIFICATION: 536
                                                                                                                                                                                                                                                                                                                                                                                                                                                          1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE/DOCKET NUMBER: 5624-161-999
FELECOMMUNICATION INFORMATION:
TELEPHONE: (212)790-9090
                                                                                                                                      NAME: Misrock, S. Leslie
REGISTRATION UNDBER: 18.872
REFERENCE/DOCKET NUMBER: 5624-161-999
RELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE: Pennie & Edmonds
STREET: 1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CLASSIFICATION: 536
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/668,648
FILING DATE: 13-MAR-1991
ATTORNEY/AGENT INFORMATION:
                                                        PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/668,648
FILING DATE: 13-MAR-1991
ATTORNEY AGENT INFORMATION:
MBER: US/08/429,998
27-APR-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME: Misrock, S. Leslie
REGISTRATION NUMBER: 18,872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEPHONE: (212)790-9090
TELEPAN: (212) 969-9741
INFORMATION FOR SEQ ID NO: 2
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELEFAX: (212) 869-9741
INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                  : 589 amino acids
amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 SARGTKCLRKKIPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity 85.7
Matches 12; Conservative
                                                                                                                                                                                                                                                                                                                                 ; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-429-998-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MOLECULE TYPE: protein
      APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  New York
: New York
RY: USA
                                        CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNTRY: US
ZIP: 10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-08-431-333-2
                                                                                                                                                                                                                                                                                                    LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CITY: 1
STATE:
```

```
Gaps
                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 4, Application US/O7668648

Patent No. 5416192

EBURGAL INFORMATION:
APPLICANT: Shoyab, Mohammed
APPLICANT: Plowman, Gregory D.
TITLE OF INVENTION: EPITHELINS: NOVEL CYSTEINE-RICH GROWTH
TITLE OF INVENTION: MODULATING PROTEINS
                                                                                                                                                                                                                                             Sequence 2, Application PC/TUS9102321
GENERAL INFORMATION:
APPLICANT: Shoyab, Mohammed
APPLICANT: Plowman, Gregory D.
TITLE OF INVENTION: EPITHELINS: NOVEL CYSTEINE-RICH GROWTH
TITLE OF INVENTION: MODULATING PROTEINS
NUMBER OF SEQUENCES: 12
CORRESPONDENCE, ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
CURRENT APPLICATION NUMBER: PCT/US91/02321
FILING DATE: 19910403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 5; 1
0.0014;
Score 65; DB 2;
Pred. No. 0.0014;
                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                               ADDRESSEE: Bristol-Myers Squibb Company
STREET: 3005 First Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            89.0%; Score 65;
85.7%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQUENCES: 12
CORRESPONDENCE ADDRESS:
ADDRESSEE: Pennie & Edmonds
STREET: 1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CLASSIFICATION: 514
ATTORNEY/AGENT INFORMATION:
NAME: POOY, Brian W.
REGISTRATION NUMBER: 32,928
REFERENCE/POCKET NUMBER: 0000
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
                                                                                                               562 SAKGTKCLRKKTPR 575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              589 amino acids
AMINO ACID
                                                                                       1 SARGIKCLRKKIPR 14
                                             Conservative .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELEFAX: (206)448-4775
INFORMATION FOR SEQ ID NO:
```

Gaps

```
Sequence 4, Application US/08431333

Patent No. 5965723

GENERAL INFORMATION:
APPLICANT: Shoyab, Mohammed
APPLICANT: Plowman, Gregory D.
TITLE OF INVENTION: BPITHELINS: NOVEL CYSTEINE-RICH GROWTH
TITLE OF INVENTION: MODULATING PROTEINS
                                                                                                                               Length 593;强
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 2; Length 593;
                                                                                                                                                                     1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/431,333
FILING DATE: 27-APR-1995
CLASSIFICATION: 536
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/668,648
FILING DATE: 13-MAR-1991
ATTORNEX/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 58; DB 2;
Pred. No. 0.023;
                                                                                                                               Score 58; DB 2
Pred. No. 0.023
3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           E: Pennie & Edmonds
1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PCT-US91-02321-4; Sequence 4, Application PC/TUS9102321; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        18,872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME: Misrock, S. Leslie
REGISTRATION NUMBER: 18,877
REFERENCE/DOCKET NUMBER: 56
TELECOMMUNICATION INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               79.5%;
71.4%;
                                                                                                                             79.5%;
Best Local Similarity 71.4%;
Matches 10; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (212)790-9090
                                                                                                                                                                                                                                                  566 AARGIKCLRREAPR 579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               : 593 amino acids
amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 SARGTKCLRKKIPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEFAX: (212) 869-9741 INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                              1 SARGTKCLRKKIPR 14
SEQUENCE CHARACTERISTICS:
LENGTH: 593 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       10; Conservative
                                              ; TOPOLOGY: linear; MOLECULE TYPE: protein US-08-429-998-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
                                      amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      New York
New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-08-431-333-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COUNTRY:
                                                                                                                                                                                                                                                                                                                               US-08-431-333-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 14
                                                                                                                                                                                                                                                                                                           RESULT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  đ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                ģ
                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 4, Application US/08429998
Patent No. 5885961
GENERAL INFORMATION:
APPLICANT: Shoyab, Mohammed
APPLICANT: Plowman, Gregory D.
TITLE OF INVENTION: EPITHELINS: NOVEL CYSTEINE-RICH GROWTH
TITLE OF INVENTION: MODULATING PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDIUM TYPE: Floppy disk
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: The PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
RPLICATION NUMBER: US/08/429,998
FILING DATE: 27-APR-1995
CLASSIFICATION: 514
                                                                                                               OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/668,648
FILING DATE: 19910819
CLASSIFICATION: 514
ATTORNEY,AGENT INFORMATION:
NAME: MISCOCK, S. Lealie
REGISFRATION NUBER: 18,872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME: Misrock, S. Leslie
REGISTRATION NUMBER: 18,872
REFERENCE/DOCKET NUMBER: 5624-161-999
TELECOMUNICATION INFORMATION:
TELEPHONE: (212)799-9090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 58;
Pred. No. (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE: Pennie & Edmonds
STREET: 1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/668,648
FILING DATE: 13-MAR-1991
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                     REFERENCE/DOCKET NUMBER: 562
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212)790-909
TELEFAX: (212) 869-9741
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
                                                                            E: Floppy disk
IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  79.5%;
71.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEFAX: (212) 869-9741 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 SARGTKCLRKKIPR 14
                                                                                                                                                                                                                                                                                                                                                                                                            H: 593 amino acids
AMINO ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                    ; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-07-668-648-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy of COMPUTER: IBM PC COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
Matches 10; Conserva
  New York
: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CITY: New York
STATE: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-08-429-998-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 12
```

ò 셤 ô

Shoyab, Mohammed

APPLICANT:

```
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Serrero, Ginette
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE REFERENCE: 29996.488/P010.A
CURRENT APPLICATION NUMBER: US/08/991,862
CURRENT FILING DATE: 1998-08-17
EARLIER APPLICATION NUMBER: 08/863,862
EARLIER FILING DATE: 1997-05-23
NUMBER OF SED ID NOS: 17
SOFTWARE: Patentin Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      : LOCATION: (1)..(14)
: OTHER INFORMATION: Internal peptide of human GP88 used to develop
: OTHER INFORMATION: neutralizing anti-human GP88 monoclonal antibody
US-08-991-862-7
  EPITHELINS: NOVEL CYSTEINE-RICH GROWTH MODULATING PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 5; Length 593;
0.023;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              72.6%; Score 53; DB 4; Length 14; 75.0%; Pred. No. 0.0055; 1ve 2; Mismatches 1; Indels
                                                                                                                                                                                                                      CURRENT APPLICATION DC-DOS/MS-DOS
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US91/02321
FILING DATE: 19910403
CLASSIFICATION: 514
ATTORNEY/ACET.
                                                                             E: Bristol-Myers Squibb Company 3005 First Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  79.5%; Score 58; 71.4%; Pred. No. C
                                                                                                                                                                                                                                                                                                                                                                                      CLASSIFTCATION: 514
ATTONELY AGENT INRORMATION:
NAME: POOR, Brian W.
REGISTRATION NUMBER: 32,928
REFERENCE/DOCKET NUMBER: ON0071A-PC
TELECOMMUNICATION:
TELEPHONE: (206)728-4800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 7, Application US/08991862
Patent No. 6309826
                                                                                                                                                                                                           OMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            INFORMATION FOR SEQ ID NO: 4:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        :1111111:: 11
566 AARGTKCLRREAPR 579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE CHARACTERISTICS:
LENGTH: 593 amino acids
TYPE: AMINO ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 SARGTKCLRKKIPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 79.5
Best Local Similarity 71.4
Matches 10; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 72.6
Best Local Similarity 75.0
Matches 9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; MOLECULE TYPE: protein
PCT-US91-02321-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: PRT
ORGANISM: Human granulin
TITLE OF INVENTION: EF
TITLE OF INVENTION: MC
NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
                                                                                                                   CITY: Seattle
STATE: Washington
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURE:
NAME/KEY: PEPTIDE
                                                                                                                                                                                            98121
                                                                                 ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 15
US-08-991-862-7
                                                                                                          STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEO ID NO 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       q
```

Gaps

ö

```
3 RGTKCLRREAPR 14
3 RGTKCLRKKIPR 14
               g
ð
```

Search completed: July 8, 2003, 16:30:19 Job time: 9.61539 secs

```
GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
```

- protein search, using sw model OM protein

July 8, 2003, 16:24:26; Search time 13.641 Seconds (without alignments) 119.483 Million cell updates/sec Run on:

1 SARGTKCLRKKIPR 14 US-09-824-647-5 73 Title: Perfect score: Sequence: BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

445758 seqs, 116419773 residues Searched:

Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database :

/cgn2\_6/ptodata/2/pubpaa/US07\_ Published\_Applications\_AA:\*

/cgn2\_6/ptodata/2/pubpaa/PCT\_NEW\_PUB.pep:/ /cgn2\_6/ptodata/2/pubpaa/US06\_NEW\_PUB.pep

/cgn2\_6/ptodata/2/pubpaa/US08\_NEW\_PUB.pep:\*
/cgn2\_6/ptodata/2/pubpaa/US08\_NEW\_PUB.pep:\*
/cgn2\_6/ptodata/2/pubpaa/US09\_NEW\_PUB.pep:\*
/cgn2\_6/ptodata/2/pubpaa/US09\_UBCOWB.pep:\*
/cgn2\_6/ptodata/2/pubpaa/US10\_UBCOWB.pep:\*
/cgn2\_6/ptodata/2/pubpaa/US10\_UBCOWB.pep:\*
/cgn2\_6/ptodata/2/pubpaa/US60\_NEW\_PUB.pep:\*
/cgn2\_6/ptodata/2/pubpaa/US60\_NEW\_PUB.pep:\* /cgn2\_6/ptodata/2/pubpaa/US07\_PUBCOMB.pep

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

	Description	US-09-824-647-5 Sequence 5, Appli		Sequence 5,	US-09-813-156-5 Sequence 5, Appli		Sequence 2, A	US-10-218-509-2 Sequence 2, Appli	US-10-281-160-2 Sequence 2, Appli	US-09-813-156-2 ' Sequence 2, Appli	US-09-824-807-2 Sequence 2, Appli	US-09-925-301-1416 Sequence 1416, Ap	<u>د</u>	,	_	US-09-813-156-7 Sequence 7, Appli	7,7	Sequence 17, A	17, 4
	OB ID	6	6	6	10	10	6	9	6	10	10	10	6	9	6	10	10	9.	6
	Query Match Length DB	14	14	14	14	14	589	589	589	589	583	621	14	14	14	14	14	593	593
<b>30</b>	Query Match	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	79.5	72.6	72.6	72.6	72.6	72.6	72.6	72.6
	Score	73	73	73	73	73	73	73	73	73	73	28	53	53	53	23	53	53	53
4	Result No.	П	7	٣	4	S	9	7	8	6	10	11	12	13	14	15	16	17	. 18

ö

; Sequence 5, Application US/10218509 ; Publication No. US20030092661A1 ; GENERAL INFORMATION:

US-10-218-509-5

Sequence 17, Appl Sequence 17, Appl Sequence 15, Appl Sequence 15, Appl Sequence 3, Appl Sequence 72, Appl Sequence 72, Appl Sequence 72, Appl Sequence 5670, Appl Sequence 570, Appl Sequence 570, Appl Sequence 179, Appl Sequence 179, Appl Sequence 179, Appl Sequence 179, Appl Sequence 179, Appl Sequence 17, Appl Sequence 26, Appl Sequence 27, Appl Sequence 26, Appl Sequence 26, Appl Sequence 27, Appl Sequence 26, Appl Sequence 27, Appl Sequence 27, Appl Sequence 28, Appl Sequence 28, Appl
10 US-09-813-156-17 10 US-09-824-807-17 9 US-09-824-807-17 10 US-09-823-15 11 US-09-790-264-15 12 US-09-790-264-15 13 US-09-782-852-3 14 US-09-917-340-72 15 US-09-917-340-72 16 US-09-917-340-72 17 US-09-917-340-72 18 US-09-917-340-72 19 US-09-788-526-5670 10 US-09-784-853-697 10 US-09-764-813-697 10 US-09-764-813-697 10 US-09-764-81-4955 10 US-09-764-81-4955 10 US-09-900-797-26 10 US-09-900-797-26 10 US-09-900-797-26 10 US-09-900-797-26 10 US-09-900-797-26 10 US-09-900-797-26 10 US-09-900-797-26 10 US-09-807-5887-588A-26 10 US-09-807-5887-588A-26 10 US-09-807-5887-11 10 US-09-807-201-201-201-201-201-201-201-201-201-201
593 275 275 275 275 275 411 407 106 106 106 106 106 106 106 106 106 106
7.7.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2
01100000000000000000000000000000000000

### ALIGNMENTS

```
Gaps
                                                                      APPLICANT: SETTERO, GINETTE
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE REFERENCE: Z9996.488/P001-A
CURRENT APPLICATION NUMBER: US/09/824,647
CURRENT FILING DATE: 2001-04-04
PRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER: 08/991,862
PRIOR APPLICATION NUMBER: EARLIER FILING DATE: 1998-08-17
PRIOR APPLICATION NUMBER: EARLIER FILING DATE: 1997-05-23
NUMBER OF SEQ ID NOS: 17
SOFTWARE: PATENTING UPPLICATION NUMBER: 08/863,862
PRIOR FILING DATE: EARLIER FILING DATE: 1997-05-23
LENGTH: 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               used to raise the in the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCATION: (1)..(14)
THER INFORMATION: Internal peptide of mouse GP88
OTHER INFORMATION: antisera against the GP88 used
OTHER INFORMATION: immunoaffinity step.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ch 100.0%; Score 73; DB 9; I similarity 100.0%; Pred. No. 1.9e-06; 14; Conservative 0; Mismatches 0;
                  Sequence 5, Application US/09824647 Publication No. US20020183270A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 SARGTKCLRKKIPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 SARGIKCLRKKIPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM: mouse granulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
Matches 14; Conserva
US-09-824-647-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; OTHER INFORUS-09-824-647-5
                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
```

```
; overion: (1)...(14)
; other inversation: internal peptide of mouse GP88 used to raise the corner inversation: antisera against the GP88 used in the corner inversation: immunoaffinity step.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:

GENERAL INFORMATION:

APPLICANT: SERIECO, GINETE

TILLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS

FILE REFERENCE: 29996.488/P001-A

CURRENT APPLICATION NUMBER: 20991.4862

PRIOR APPLICATION NUMBER: 08/991,862

PRIOR FILING DATE: 1997-12-16

PRIOR FILING DATE: 1997-05-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; LOCATION: (1)...(14)
; OTHER INFORMATION: Internal peptide of mouse GP88 used to raise the ; OTHER INFORMATION: antisera against the GP88 used in the ; OTHER INFORMATION: immunoaffinity step.
                                                     TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 73; DB 10;
Pred. No. 1.9e-06;
; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 73; DB 10;
Pred. No. 1.9e-06;
; Mismatches 0;
                              APPLICANT: Serrero, Ginette
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWT
FILE REFERENCE: 29996.488/P001-A
CURRENT APPLICATION NUMBER: US/09/813,156
CURRENT FILING DATE: 2001-03-21
PRIOR APPLICATION NUMBER: 08/991,862
PRIOR FILING DATE: 1997-12-16
PRIOR APPLICATION NUMBER: 08/863,862
PRIOR FILING DATE: 1997-05-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 5, Application US/09824807 Patent No. US20020094966A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-824-647-2 ; Sequence 2, Application US/09824647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100.0%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100.08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 SARGTKCLRKKIPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 SARGTKCLRKKIPR 14
                                                                                                                                                                                                                                                         SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 5 ELENGTH: 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQ ID NOS: 17
Patentin Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 100.(
Best Local Similarity 100.(
Matches 14; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 14; Conservative
                                                                                                                                                                                                                                                                                                                                                 ORGANISM: mouse granulin
FEATURE:
NAME/KEY: PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM: mouse granulin
                                                                                                                                                                                                                                      NUMBER OF SEQ ID NOS: 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQ ID NO 5
LENGTH: 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NUMBER OF
SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 5, Application US/10281160
Publication No. US20030108950A1
GENERAL INFORMATION:
APPLICAMT: Serrero, Ginette
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE REFERENCE: 2996.488/P001-A
CURRENT APPLICATION NUMBER: US/10/281,160
PRIOR APPLICATION NUMBER: US/10/281,862
PRIOR FILING DATE: 1998-081.7
PRIOR APPLICATION NUMBER: 08/08/3,862
                                                                                                                                                                                                                                                                                                                                                               , LACATION: (1)...(14)
; OTHER INFORMATION: Internal peptide of mouse GP88 used to raise the ; OTHER INFORMATION: antisera against the GP88 used in the ; OTHER INFORMATION: immunoaffinity step.
US-10-218-509-5
APPLICANT: Serrero, Ginette
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE REPERENCE: 2996.488/7001-A
CURRENT APPLICANION NUMBER: US/10/218,509
CURRENT FILING DATE: 2002-08-15
PRIOR APPLICATION NUMBER: 08/991,862
PRIOR FILING DATE: 1998-08-17
PRIOR FILING DATE: 1997-05-23
NUMBER: OF SEQ ID NOS: 17
SOFTWARE: PATENTINY FOR SEQ ID NOS: 17
SOFTWARE: PATENTINY VET. 2.0
SEQ ID NO 5
LENGTH: 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LOCATION: (1)...(14)
OTHER INFORMATION: Internal peptide of mouse GP88 used to raise the OTHER INFORMATION: antisera against the GP88 used in the OTHER INFORMATION: immunoaffinity step.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 100.0%; Score 73; DB 9; Length 14; Best Local Similarity 100.0%; Pred. No. 1.9e-06; Matches 14; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100.0%; Score 73; DB 9; Length 14; 100.0%; Pred. No. 1.9e-06; Live 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; Sequence 5, Application US/09813156
; Patent No. US20020061859A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRIOR FILING DATE: 1997-05-23
NUMBER OF SEQ ID NOS: 17
SOFTWARE: PatentIn Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SARGTECLERKIPE 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 SARGTKCLRKKIPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity 100.
Matches 14; Conservative
                                                                                                                                                                                                                                                                                                   TYPE: PRT
ORGANISM: mouse granulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 4
US-09-813-156-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOFTWARE: I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
```

ö

Length 14; Indels ö

Gaps

ő

```
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 2
LENGTH: 589
             NUMBER OF SEQ ID NOS: 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQ ID NO 2
LENGTH: 589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JS-09-824-807-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-813-156-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: PRT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQ ID NO 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                  õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
GENERAL INFORMATION:
GENERAL INFORMATION:
GENERAL INFORMATION:
GENERAL INFORMATION:
GENERAL INFORMATION:
GENERAL INFORMATION:
GENERAL SETEROCE: 2996.488/P001-A
GENERAL PEPLICATION NUMBER: US/09/824,647
GURRENT PELLING DATE: 2001-04-04
FRIOR FILING DATE: EARLIER FILING DATE: 1998-08-17
FRIOR FILING DATE: EARLIER FILING DATE: 1997-05-23
FRIOR FILING DATE: BARLIER FILING DATE: 1997-05-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Serrero, Ginette
TITLE OF INVENTION: 88 RDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE REFERENCE: 2996.488/P001.A
CURRENT APPLICATION NUMBER: US/10/218,509
CURRENT FILING DATE: 2002-08-15
PRIOR APPLICATION UNBER: 08/991,862
PRIOR PPLICATION NUMBER: 08/991,862
PRIOR PPLICATION NUMBER: 08/863,862
PRIOR FILING DATE: 1997-05-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 2, Application US/10281160
Publication No. US20030108950A1
GENERAL INFORMATION:
APPLICANT: Serrero, Ginette
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE REFERENCE: 29956.488/P001.A
CURRENT APPLICATION NUMBER: US/10/281,160
CURRENT FILING DATE: 2002-10-28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 100.0%; Score 73; DB 9; Length 589; Best Local Similarity 100.0%; Pred. No. 9e-05; Matches 14; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 100.0%; Score 73; DB 9; Best Local Similarity 100.0%; Pred. No. 9e-05; Matches 14; Conservative 0; Mismatches 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR APPLICATION NUMBER: US/08/991,862
PRIOR FILING DATE: 1998-08-17
PRIOR APPLICATION NUMBER: 08/863,862
PRIOR FILING DATE: 1997-05-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; ORGANISM: Mouse epithelin/granulin US-10-218-509-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; ORGANISM: Mouse epithelin/granulin US-09-824-647-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 2, Application US/10218509
Publication No. US20030092661A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    562 SARGTKCLRKKIPR 575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  11111111111111
562 SARGTKCLRKKIPR 575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 SARGTKCLRKKIPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 SARGTKCLRKKIPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQ ID NOS: 17
SOFTWARE: Patentin Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQ ID NO 2
LENGTH: 589
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US+10-218-509-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-10-281-160-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
```

```
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                          Sequence 2, Application US/09813156
Patent No. US20020061859A1
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Serrero, Ginette
TILE POF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE REPERENCE: 29996'A88/P001.A
CURRENT APPLICATION NUMBER: US/09/813,156
CURRENT FILING DATE: 2001-03-21
PRIOR PILING DATE: 1997-12-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
APPLICANT: Serrero, Ginette
TITLE OF INFORMATION:
FILE REFERENCE: 2996-488/PR01-A
CURRENT APPLICATION NUMBER: US/09/824,807
CURRENT FILING DATE: 2001-04-04
PRIOR FILING DATE: 2001-04-04
PRIOR FILING DATE: 108/991,862
PRIOR FILING DATE: 08/963,862
PRIOR FILING DATE: 1997-02-16
PRIOR FILING DATE: 1987: 08/963,862
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      100.0%; Score 73; DB 10; Length 589; 100.0%; Pred. No. 9e-05; Live 0; Mismatches 0; Indels (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100.0%; Score 73; DB 10; Length 589; 100.0%; Pred. No. 9e-05;
                                                                   100.0%; Score 73; DB 9; Length 589; 1100.0%; Pred. No. 9e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                      0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                      0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRIOR FILING DATE: 1997-12-16
PRIOR APPLICATION NUMBER: 08/863,862
PRIOR FILING DATE: 1997-05-23
NUMBER OF SEQ ID NOS: 17
SOFTWARE: PatentIn Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; ORGANISM: Mouse epithelin/granulin
US-09-824-807-2
; TYPE: PRT
; ORGANISM: Mouse epithelin/granulin
US-10-281-160-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                , ORGANISM: Mouse epithelin/granulin US-09-813-156-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 2, Application US/09824807
Patent No. US20020094966A1
                                                                                                                                                                                                            562 SARGIKCLRKKIPR 575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    562 SARGTKCLRKKIPR 575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 SARGTKCLRKKIPR 14
                                                                                                                                                                                      1 SARGTKCLRKKIPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQ ID NOS: 17
SOFTWARE: Patentin Ver. 2.0
                                                                                      Query Match (100.0
Best Local Similarity 100.0
Matches 14; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 100.

Best Local Similarity 100.

Matches 14; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local Similarity 100.
Matches 14; Conservative
```

```
ORGANISM: Humaḥ granulin
                                                                                                                                                                                                                                                      NUMBER OF SEQ! ID NOS: 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Similarity
Matches 9; Conserv
                                                      GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                        NAME/KEY: PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-10-218-509-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-10-281-160-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LENGTH: 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                   TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQ ID NO 7
                                                                                                                                                                                                                                                                                                               LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IOCATION: (1)...(14)
OTHER INFORMATION: Internal peptide of human GP88 used to develop
OTHER INFORMATION: neutralizing anti-human GP88 monoclonal antibody.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 7, Application US/09824647
Publication No. USS0020183270A1
GENERAL INFORMATION:
APPLICANT: Serrero, Ginette
TITLE OF INFORTION: 88 KDA TUMORICENIC GROWTH FACTOR AND ANTAGONISTS
FILE REFERENCE: 29996.488/FD011-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CURRENT FILING DATE: 2001-04-04
PRIOR APPLICATION NUMBER: EARLIER EPPLICATION NUMBER: 08/991,862
PRIOR PILING DATE: EARLIER FILING DATE: 1998-08-17
PRIOR PLING DATE: EARLIER FILING DATE: 1998-08-17
PRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER: 08/863,862
NUMBER OF SEO ID NOS: 2.0
SOFTWARE: PATENTIN Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 621;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 53; DB 9; Length 14;
Pred. No. 0.0066;
2; Mismatches 1; Indels
                                                                                                                                                                    GENERAL INFORMATION:
APPLICANT: Rosen et al.
TITLE OF INVENTION: Nucleic Acids, Proteins and Antibodies
FILE REFERENCE: PA106
CURRENT APPLICATION NUMBER: US/09/925,301
CURRENT FILING DATE: 2001-08-10
PRIOR APPLICATION NUMBER: PCT/USO/05882
PRIOR FILING DATE: 2000-03-08
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0.043;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 58;
Pred. No. (
                                                                                                                                      Sequence 1416, Application US/09925301
Patent No. US20020052308A1
                                                                                                                                                                                                                                                                                                                             PRIOR APPLICATION NUMBER: 60/124,270
PRIOR FILING DATE: 1999-03-12
NUMBER OF SEQ ID NOS: 1694
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 1416
LENGTH: 621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     71.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      72.6%;
ilarity 75.0%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 SARGTKCLRKKIPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 SARGTKCLRKKIPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity 71.4
Matches 10; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3 RGTKCLRKKIPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3 RGTKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM: Human granulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-925-301-1416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
Matches 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME/KEY: PEPTIDE
                                                                                                                  US-09-925-301-1416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-824-647-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-824-647-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQ ID NO 7
LENGTH: 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .
QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
ð
                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
```

```
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
APPLICANT: Serrero, Ginette
TITLE OF INFORMATION:
TITLE OF INFORMATION:
FILE REFERENCE: 29996.488/P001-A
CURRENT FILING DATE: 2002-10-28
PRIOR APPLICATION NUMBER: US/08/991,862
PRIOR APPLICATION NUMBER: 08/863,862
PRIOR PILING DATE: 1999-08-17
PRIOR PILING DATE: 1997-05-23
NUMBER OF SEQ ID NOS: 17
SOFTWARE: PATENTIN VOIL: 2.0
                                                                                                                                               APPLICANT: Serrero, Ginette TITLE OF INVENTION 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS FILE REFERENCE: 2996.488/F001-8.

CURRENT APPLICATION NUMBER: US/10/218,509

CURRENT FILING DATE: 2002-08-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LOCATION: (1)...(14).
OTHER INFORMATION: Internal peptide of human GP88 used to develop
OTHER INFORMATION: neutralizing anti-human GP88 monoclonal antibody.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY: PEPTIDE LOCATION: 1...(1)...(14)...(1)...(14)...(15)...(14)...(14)...(14)...(14)...(14)...(14)...(14)...(14)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...(15)...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 53; DB 9;
Pred. No. 0.0066;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 53; DB 9;
Pred. No. 0.0066;
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2; Mismatches
                                                                                                                                                                                                                                                                                                                                              CURRENT FILING DATE: 2002-08-15
PRIOR APPLICATION NUMBER: 08/991,862
PRIOR FILING DATE: 1998-08-17
PRIOR PPLICATION NUMBER: 08/863,862
PRIOR FILING DATE: 1997-05-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 7, Application US/10281160 Publication No. US20030108950A1
Sequence 7, Application US/10218509 Publication No. US20030092661A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      72.6%;
75.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      72.6%;
75.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 72.6
Best Local Similarity 75.0
Matches 9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3 RGTKCLRKKIPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3 RGTKCLRKKIPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: PRT
ORGANISM: Human granulih
```

```
US-09-813-156-7;

5 Sequence 7, Application US/09813156;

5 Ratent No. US20020661859A1

5 GENERAL INFORMATION:

RATE REPLICATION:

FILE REFERENCE: 29996.488/P001-A

5 CURRENT PAPLICATION NUMBER: US/09/813,156

CURRENT FILING DATE: 1997-12-16

5 PRIOR FILING DATE: 1997-05-23

FRIOR FILING DATE: 1997-05-23

FRIOR FILING DATE: 1997-05-23

FRIOR PRIOR FILING DATE: 1997-05-23

FRIOR FILING DATE: 1997-05-23

FRIOR PRIOR FILING DATE: 1997-05-23

FRIOR FILING DATE: 1997-05-23

FRIOR FILING DATE: 1997-05-23

FRIOR APPLICATION NUMBER: US/863,862

FRIOR FILING DATE: 1997-05-23

FRIOR FILING DA
```

Search completed: July 8, 2003, 16:31:41 Job time: 14.641 secs

3 RGTKCLRKKIPR 14 |||||||::|| 3 RGTKCLRREAPR 14

à

```
GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
```

OM protein - protein search, using sw model

July 8, 2003, 16:19:45; Search time 14.1795 Seconds (without alignments) 94.918 Million cell updates/sec Run on:

US-09-824-647-5 Perfect score:

73 1 SARGTKCLRKKIPR 14 Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

283224 seqs, 96134422 residues Searched: Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

1: pirl:\* 2: pir2:\* 3: pir3:\* 4: pir4:\* PIR\_73:\* Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

#### SUMMARIES

	•	Description	epithelin/granulin	epithelin/granulin	granulin precursor	hypothetical prote	Down syndrome crit	glutamine-tRNA lig	hypothetical prote	hypothetical prote	poly(A) polymerase	probable aminotran	serine/threonine-p	hypothetical prote	hypothetical prote	>	hypothetical prote	hypothetical prote	gastric mucin rela	phosphoglucomutase	dueuine tRNA-ribos	phosphoglucomutase	phosphoglucomutase	hypothetical prote	hypothetical prote		sterol 0-acyltrans	hypothetical prote	SINAH1 protein [im	integrase, phage f	diacylglycerol 0-a
		er er	C38128	B38128	GYHU	G64476	JC7279	AB0321	T24824	E64450	875598	AH0361	T48400	T02518	C86246	C71554	T49514	T28023	T49513	AE3057	D64354	AH3487	A96229	T19416	.F97737	B82299	T01294	S60947	T50560	B82272	H84576
		80	CI	~	-	ď	~	7	7	~	ď	~	~	~	~	~	7	7	7	~	~	?	7	7	7	7	N	ď	7	7	~
		Match Length	589	289	593	452	289	555	288	424	942	411	821	825	341	283	327	331	422	542	550	266	267	533	99	. 158	231	265	336	422	441
æ	Query	Match	100.0	0.68	79.5	56.2	54.8	54.8	53.4	53.4	53.4	52.1	52.1	52.1	51.4	50.7	50.7	50.7	50.7	50.7	50.7	.50.7	50.7	50.0	49.3	49.3	49.3	49.3	49.3	49.3	49.3
		Score	73	65	28	41	40	40	39	39	39	38	38	38	37.5	37	37	37	37	37	37	. 37	37	36.5	36	36	36	36	36	36	36
	Result	No.		7	m	4	S	9	7	80	σ	10	11	12	13	14	15	16	17	18	19	20	21	22	23	<b>5</b> ₹	25	36	27	28	29

																•
MATE efflux family	conserved hypothet	diacylglycerol 0-a	hypothetical prote	hypothetical prote	chromosome segrega	probable lipoprote	deoxýtytidylate de	acrogranin - guine	bcl-2-associated p	hypothetical prote	hypothetical prote	hypothetical prote	ribosomal protein	r40g2 protein - ri	hypothetical prote	
B95135	D98003	T52584	T40036	T45908	A82543	873679	н97253	148141	C47538	T33983	164021	T19253	A37055	T03960	T24810	
7	~	7	~	7	~	7	7	7	7	N	~	7	7	~	7	
453	453	520	803	839	1167	1300	162	591	41	141	167	233	270	343	350	
49.3	49.3	49.3	49.3	49.3	49.3	49.3	48.6	48.6	47.9	47.9	47.9	47.9	747.9	47.9	47.9	
36	36	36	36	36	36	.98	35.5	35.5	35	35	35	35	35	35	35	
30	31	32	33	34	35	36	37	38	39	0.4	41	42	43	44	45	

#### ALIGNMENTS

: : :

RESULT 1

C38128	N;Alternate names: acrogranin; PC-cell-derived growth factor	C; Species: Mus musculus (house mouse)	C;Date: 10-Jul-1992 #sequence_revision 10-Jul-1992 #text_change 20-Aug-1999	C;Accession: C38128; S32503; I49468; A46705	R; Plowman, G.D.; Green, J.M.; Neubauer, M.G.; Buckley, S.D.; McDonald, V.L.; Toda	J. Biol. Chem. 267, 13073-13078, 1992	A; Title: The epithelin precursor encodes two proteins with opposing activities on	C38128 C38128 epithelin/granulin precursor - mouse N;Alternate names: acrogranin; PC-cell-derived growth factor C;Species: Mus musculus (house mouse) C;Date: 10-Jul-1992 #sequence_revision 10-Jul-1992 #text_change 20-Aug-1999 C;Date: 10-Jul-1992 #sequence_revision 10-Jul-1992 #text_change 20-Aug-1999 C;Accession: C38128; S32503; I49468; A46705 R;PLowman, G.D.; Green, J.M.; Neubauer, M.G.; Buckley, S.D.; McDonald, V.L.; Toda J. Biol. Chem. 267, 13073-13078, 1992 A;Title: The epithelin precursor encodes two proteins with opposing activities on A;Reference number: A38128; MUID:92317004; PMID:1618805
		N; Alternate names: acrogranin; PC-cell-derived growth factor	N;Alternate names: acrogranin; PC-cell-derived growth factor C;Species: Mus musculus (house mouse)	N;Alternate names: acrogranin; PC-cell-derived growth factor C;Species: Mus musculus (house mouse) C;Date: 10-Jul-1992 #sequence_revision 10-Jul-1992 #text_change 20-Aug-1999	N;Alternate names: acrogranin; PC-cell-derived growth factor C;Species: Mus musculus (house mouse) C;Date: 10-Jul-1992 #sequence_revision 10-Jul-1992 #text_change 20-Aug-1999 C;Accession: C38128; S32503; I49468; A46705	N;Alternate names: acrogranin; PC-cell-derived growth factor C;Species: Mus musculus (house mouse) C;Date: 10-Jul-1992 #sequence_revision 10-Jul-1992 #text_change 20-Aug-1999 C;Accession: C33128; S32503; I49468; A46705 C;Accession: G.D.; Green, J.M.; Neubauer, M.G.; Buckley, S.D.; McDonald, V.L.; Toda	N; Alternate names: acrogranin; PC-cell-derived growth factor C; Species: Mus musculus (house mouse) C; Date: 10-Jul-1992 #sequence_revision 10-Jul-1992 #text_change 20-Aug-1999 C; Accession: C38128; S32503; I49468; A46705 R; Plowman, G.D.; Green, J.M.; Neubauer, M.G.; Buckley, S.D.; McDonald, V.L.; Toda J. Biol. Chem. 267, 13073-13078, 1992	epithelin/granulin precursor - mouse
epithelin/granulin precürsor - mouse N;Alternate names: acrogranin; PC-cell-derived growth factor C;Species: Mus musculus (house mouse) C;Species: Mus musculus (house mouse) C;Date: 10-Jul-1992 #sequence_revision 10-Jul-1992 #text_change 20-Aug-1999 C;Accession: C38128; S32503; I49468; A46705 R;Plowman, G.D.; Green, J.M.; Neubauer, M.G.; Buckley, S.D.; McDonald, V.L.; Toda J. Biol. Chem. 267, 13073-13078, 1992 J. Biol. Chem. 267, 13073-13078, 1992	C.Species: Mus musculus (house mouse) C;Date: 10-Jul-1992 #sequence_revision 10-Jul-1992 #text_change 20-Aug-1999 C;Date: 10-Jul-1992 #sequence_revision 10-Jul-1992 #text_change 20-Aug-1999 C;Accession: C38128; S32503; I49468; A6706 R;Plowman, G.D.; Green, J.M.; Neubauer, M.G.; Buckley, S.D.; McDonald, V.L.; Toda J. Biol. Chem. 267, 13073-13078, 1992 J. Biol. Chem. 267, 13073-13078, 1992 A;Title: The epithelin precursor encodes two proteins with opposing activities on	C;Date: 10-Jul-1992 #sequence_revision 10-Jul-1992 #text_change 20-Aug-1999 C;Date: 10-Jul-1992 #sequence_revision 10-Jul-1992 #text_change 20-Aug-1999 C;Accession: C38128; S32503; I49468; A46705 R;Plowman, G.D.; Green, J.M.; Neubauer, M.G.; Buckley, S.D.; McDonald, V.L.; Toda J. Biol. Chem. 267, 13073-13078, 1308 and July Procursor and July Procursor and Aritle: The epithelin precursor encodes two proteins with opposing activities on	C; Accession: C38128; S32503; 149468; A46705 R; Plowman, G.D.; Green, J.M.; Neubauer, M.G.; Buckley, S.D.; McDonald, V.L.; Toda J. Blol. Chem. 267, 13073-13078, 1992 A: Blol. Chem. 267, 13073-13078, 1992 A: Yitle: The epithelin precursor encodes two proteins with opposing activities on	R;Plowman, G.D.; Green, J.M.; Neubauer, M.G.; Buckley, S.D.; McDonald, V.L.; Toda J. Biol. Chem. 267, 13073-13078, 1992 A;Title: The epithelin precursor encodes two proteins with opposing activities on	J. Biol. Chem. 267, 13073-13078, 1992 A; Title: The epithelin precursor encodes two proteins with opposing activities on	A; Title: The epithelin precursor encodes two proteins with opposing activities on		A; Reference number: A38128; MUID:92317004; PMID:1618805
epithelin/granulin precürsor - mouse NiAlternate names: acrogranin; PC-cell-derived growth factor C;Species: Mus musculus (house mouse) C;Species: Mus musculus (house mouse) C;Species: 10-Jul-1992 #sequence_revision 10-Jul-1992 #text_change 20-Aug-1999 C;Accession: C38128; S32503; I49468; A46705 R;Plowman, G.D.; Green, J.M.; Neubauer, M.G.; Buckley, S.D.; McDonald, V.L.; Toda J. Biol. Chem. 267, 13073-13078, 1992 A;Title: The epithelin precursor encodes two proteins with opposing activities on A;Reference number: A38128; MUID:92317004; PMID:1618805	C; Species: Mus musculus (house mouse) C; Species: Mus musculus (house mouse) C; Bate: 10-Jul-1992 #sequence_revision 10-Jul-1992 #text_change 20-Aug-1999 C; Accession: C3128; S32503; I49468; A46705 R; Plowman, G.D.; Green, J.M.; Neubauer, M.G.; Buckley, S.D.; McDonald, V.L.; Toda J. Biol. Chem. 267, 13073-13078, 1992 A; Title: The epithalin precursor encodes two proteins with opposing activities on A; Reference number: A3128; MUDD:9231004; PMID:1618805	C;Date: 10-Jul-1992 #sequence_revision 10-Jul-1992 #text_change 20-Aug-1999 C;Accession: C38128; S32503; I49468; A46705 R;Plowman, G.D.; Green, J.M.; Neubauer, M.G.; Buckley, S.D.; McDonald, V.L.; Toda J. Biol. Chem. 267, 13073-13078, 1992 A;Title: The epithelin precursor encodes two proteins with opposing activities on A;Reference number: A38128; MUID:92317004; PMID:1618805	C, Accession: C38128; S32503; I49468; A46705 R;Plowman, G.D.; Green, J.M.; Neubauer, M.G.; Buckley, S.D.; McDonald, V.L.; Toda J. Biol. Chem. 267, 13073-13078, 1992 A;Title: The epithelin precursor encodes two proteins with opposing activities on A;Reference number: A38128; MUID:92317004; PMID:1618805	R; Plowman, G.D.; Green, J.M.; Neubauer, M.G.; Buckley, S.D.; McDonald, V.L.; Toda J. Blol. Chem. 267, 13073-13078, 1992 A;Title: The epithelin precursor encodes two proteins with opposing activities on A;Reference number: A38128; MUDD:92317004; PMID:1618805	J. Biol. Chem. 267, 13073-13078, 1992 A;Title: The epithelin precursor encodes two proteins with opposing activities on A;Reference number: A38128; MJID:92317004; PMID:1618805	A; Title: The epithelin precursor encodes two proteins with opposing activities on A; Reference number: A38128; MJID:92317004; PMID:1618805	A; Reference number: A38128; MUID:92317004; PMID:1618805	A; Accession: C38128
epithelin/granulin precirsor - mouse NiAlternate names: acrogranin; Pc-cell-derived growth factor NiAlternate names: acrogranin; Pc-cell-derived growth factor C; Species: Mus musculus (house mouse) C; Date: 10-Jul-1992 #sequence_revision 10-Jul-1992 #text_change 20-Aug-1999 C; Accession: C38128; S32503; I349468; A46705 R; Plowman, G.D.; Green, J.M.; Neubauer, M.G.; Buckley, S.D.; McDonald, V.L.; Toda J. Biol. Chem. 267, 13073-13078, 1992 A; Title: The epithelin precursor encodes two proteins with opposing activities on A; Reference number: A38128; MUID:92317004; PMID:1618805 A; Accession: C38128	C; Species: Mus musculus (house mouse) C; Species: 10-Jul-1992 #steart_change 20-Aug-1999 C; Date: 10-Jul-1992 #sequence_revision 10-Jul-1992 #text_change 20-Aug-1999 C; Accession: C38128; S32503; J49468; A46705 R; Plowman, G.D.; Green, J.M.; Neubauer, M.G.; Buckley, S.D.; McDonald, V.L.; Toda J. Biol. Chem. 267, 13073-13078, 1992 A; Title: The epithelin precursor encodes two proteins with opposing activities on A; Reference number: A38128; MUID:92317004; PMID:1618805 A; Accession: C38128	C; Date: 10-Jul-1992 #sequence_revision 10-Jul-1992 #text_change 20-Aug-1999 C; Accession: C38128; S32503; I49468; A46705 C; Accession: C38128; S32503; I49468; A46705 R; Plowman, G.D.; Green, J.M.; Neubauer, M.G.; Buckley, S.D.; McDonald, V.L.; Toda J. Biol. Chem. 267, 13073-13078, 1992 A; Title: The epithelin precursor encodes two proteins with opposing activities on A; Reference number: A38128; MUID:92317004; PMID:1618805 A; Reference number: A38128.	C, Accession: C38128; S32503; 149468; A46705 R; Plowman, G.D.; Green, J.M.; Neubauer, M.G.; Buckley, S.D.; McDonald, V.L.; Toda J. Biol. Chem. 267, 13073-13078, 1992 A; Title: The epithelin precursor encodes two proteins with opposing activities on A; Reference number: A38128; MUID:92317004; PMID:1618805 A; Accession: C38128	R; Plowman, G.D.; Green, J.M.; Neubauer, M.G.; Buckley, S.D.; McDonald, V.L.; Toda J. Biol. Chem. 267, 13073-13078, 1992 A; Title: The epithelin precursor encodes two proteins with opposing activities on A; Reference number: A38128; MUID:92317004; PMID:1618805 A; Accession: C38128	J. Biol. Chem. 267, 13073-13078, 1992 A;Title: The epithelin precursor encodes two proteins with opposing activities on A;Reference number: A38128; MUID:92317004; PMID:1618805 A;Recession: C38128	A; Title: The epithelin precursor encodes two proteins with opposing activities on A; Reference number: A38128; MUID:92317004; PMID:1618805 A; Accession: C38128	A; Reference number: A38128; MUID:92317004; PMID:1618805 A; Accession: C38128	

A; Molecule type: mRNA A; Residues: 1-589 <PLO> A; Residues: 1-589 <PLO> A; Cross-references: GB: X62321; NID: 950851; PIDN: CAA44197.1; PID: 950852 A; Cross-references: GB: X62321; NID: 950851; T.; Gerton, G.L. R; Baba; T.; Nemoto, H.; Watanabe, K.; Arai, Y.; Gerton, G.L. FEBS Lett. 322, 89-94, 1993 FEBS Lett. 322, 89-94, 1993 A; Title: Exon/Intron organization of the gene encoding the mouse epithelin/granul A; Reference number: S32503; MUID: 93245991; PMID: 8482392 A; Accession: S32503

A; Molecule type: DNA A; Moelecule type: DNA R; Residues: 18-349, L', 351-589 <BAB> R; Residues: 18-349, L', 351-589 <BAB> R) Residues T.; Hofff, H.B. Mol. Reprod. Dev. 34, 233-243, 1993 Mol. Reprod. Dev. 34, 233-243, 1993 Mol. Reprod. Dev. 34, 233-243, 1993 A; Title: Arcogramin, an acrosomal cysteine-rich glycoprotein, is the precusor of A; Reference number: 148141; MUID:93228994; PMID:8471244 A; Accession: 149468

A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-250, 'L', 252-253, 'V', 255-349, 'L', 351-401, 'SA', 404-589 <RES>
A;Residues: 1-250, 'L', 252-253, 'V', 255-349, 'L', 351-401, 'SA', 404-589 <RES>
A;Cross-references: GB:N86736; NID:9191766; PIDN:AAA37191.1; PID:9191767
R;Zhou, J.; Gao, G.; Crabb, J.W.; Serrero, G.
B;Zhou, J.; Gao, G.; Crabb, J.W.; Serrero, G.
A;Title: Purification of an autocrine growth factor homologous with mouse epithel A;Reference number: A46705; MUID:93266526; PMID:8496151

A; Status: preliminary

A;Molecule type: protein A;Residues: 18-19,'X',21-25,'X',27-29,'XX',32;'XXX',119-127;152-154,'DXK',158-161 C;Superfamily: granulin

Length 589;

ö Gaps ö 0; Indels Query Match 100.0%; Score 73; DB 2; Best Local Similarity 100.0%; Pred. No. 2e-05; Matches 14; Conservative 0; Mismatches 0;

a õ

RESULT B38128

Wed

```
A:Residues: 1-406, R', 408-433, G',435-453,'G',455-459,'Q',461-546,'A',548-566,'R',5
A;Cross-references: GB:M'5161; NID:9183612; PIDN:AAA58617.1; PID#9183613
A;Note: this sequence has been revised in reference JC1284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Map position: 17pter-17qter
Introns: 46/3; 88/3; 117/1; 154/3; 200/1; 236/3; 279/1; 311/3; 393/3; 471/3; 548,
                                          Proc. Natl. Acad. Sci. U.S.A. 89, 1715-1719, 1992
A;Title: Isolation and sequence of the granulin precursor cDNA from human bone marr
A;Reference number: A38118; MUID:92179253; PMID:1542665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C; Accession: G64476
R; Bult, C.J.; White, O.; Olsen, G.J.; Zhou, L.; Fleischmann, R.D.; Sutton, G.G.; Bl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Molecule type: protein
Residues: 442-446, XDTSS', 456-458, DG' <BA4>
Residues: 442-446, XDTSS', 456-458, DG' <BA4>
Rardana, A.; Bagshawe, K.D.; Coles, B.; Read, D.; Taylor, M.
c. J. Cancer 67, 686-692, 1993
Title: Characterisation of UGP and its relationship with beta-core fragment.
Reference number: A56873; MUID:93229246; PMID:8471426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C;Species: Methanococcus jannaschii
C;Date: 13-Sep-1996 #sequence_revision 13-Sep-1996 #text_change 29-Sep-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 F;368/Binding site: carbohydrate (Asn) (covalent) #status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Molecule type: protesh; Residues: 364-367, XX,369-385, W,387-396 <BA3>; Note: this protesh was purified and characterized as granulin C; Accession: D36698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Molecule type: protein
Residues: 206-218, H',220-233 <BA2>
Note: this protein was purified and characterized as granulin
Accession: C36698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Note: this protein was purified and characterized as granulin Accession: B36698
                                                                                                                                                                                                                                                                                                                                     R;Bateman, A.; Belcourt, D.; Bennett, H.; Lazure, C.; Solomon, Blochem. Biophys! Res. Commun. 173, 1161-1168, 1990
A;Title: Granulins, a novel class of peptide from leukocytes. A;Reference numbér: A36698; MOID:91097544; PMID:2268320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Molecule type: protein halous: 201-295 KRAR> hashings: 201-203, XY,285-289, SZ,291-295 KRAR> hasperimental source: urine hybris sequence extracted from NCBI backbone (NCBIP:129524)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   123-179/Product: granulin F *status predicted <GRP>
206-26J/Product: granulin B *status experimental <GRB>
281-36/Product: granulin A *status experimental <GRA>
41-37/Product: granulin C *status experimental <GRA>
42-496/Product: granulin D *status predicted <GRD>
18-573/Product: granulin E *status predicted <GRD>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18-593/Product: granulin #status predicted AMAT>
18-593/Product: progranulin #status predicted <PRO>
18-44/Product: paragranulin #status experimental <PGR>

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          <SIG>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 hypothetical protein MJ1416 - Methanococcus jannaschii
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    granulin G #status predicted <GRG>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0.011;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7/Domain: signal sequence #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 58;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Cross-references: GDB:136006; OMIM:138945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Superfamily: granulin
Keywords: glycoprotein; tandem repeat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      79.5%;
71.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 SARGTKCLRKKIPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      :||||||||: ||
566 AARGTKCLRREAPR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Molecule type: protein
Residues: 281-336 <BAT>
               Palfree,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best_Local Similarity
Matches 10; Conserv
                                                                                                                                                                                           A; Molecule type: mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                F;442-496/Product:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            granulin precursor [validated] - human
N;Alternate names: epithelin
N;Cobtains: granulin A; granulin B; granulin C; granulin D; granulin B; granulin F; gran
C;Specias: Homo saplens (man)
C;Date: 30-Sep-1992 #sequence_revision 03-May-1996 #text_change 08-Dec-2000
C;Accession: JC1284; A38128; A38118; A36698; B36698; C36698; D36698; A56873
R;Bhandari, V.; Bateman, A.
epithelin/granulin precursor - rat
C; Species: Rattus norvegicus (Norway rat)
C; Species: Rattus norvegicus (Norway rat)
C; Species: Rattus norvegicus (Norway rat)
C; Species: Po-Jul-1992 #sequence_revision 10-Jul-1992 #text_change 20-Aug-1999
C; Accession: B38128; A36199; B36698; E36698; E3272
R; Plowman, G.D.; Green, J.M.; Neubauer, M.G.; Buckley, S.D.; McDonald, V.L.; Todaro, G.J
A; D Atol. Chem. 267, 13073-13078, 1992
A; Title: The epithelin precursor encodes two proteins with opposing activities on epithe A; Reference number: A38128; MUID:92317004; PMID:1618805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  J. Biol. Chem. 267, 13073-13078, 1992
A;Title: The epithelin precursor encodes two proteins with opposing activities on epithe A;Reference number: A38128; MUID:92317004; PMID:1618805
                                                                                                                                                                                                                                                                                                                                                                                                   A;Cross-references: GB:X62322; NID:956108; PIDN:CAA44198.1; PID:956109
R;Shoyab, M.; McDonald, V.L.; Byles, C.; Todaro, G.J.; Plowman, G.D.
Proc. Natl. Acad. Sci. U. S.A. 87, 7912-7916, 1990
A;Title: Epithelins 1 and 2: isolation and characterization of two cysteine-rich growth-A;Reference number: A36199; MUID:91045907; PMID:2236009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Title: The complementary deoxyribonucleic acid sequence, tissue distribution, and cell
A;Reference number: I53272; MUID:94062640; PMID:8243292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               J.M.; Neubauer, M.G.; Buckley, S.D.; McDonald, V.L.; Todaro, G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Residues: 1-200,'S',203-388,'M',390-589 <RES>
A;Cross-references: GB:M97750; NID:g204223; PIDN:AAA16903.1; PID:g204224
C;Superfamily: granulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Biochem. Biophys. Res. Commun. 188, 57-63, 1992
A; Title: Structure and chromosomal location of the human granulin gene.
A; Reference number: JC1284; MUID:93038704; PMID:1417868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Molecule type: mRNĀ
A;Residues: 1-593 <PLO>
A;Cross-references: GB:X62320; NID:g31192; PIDN:CAA44196.1; PID:g31193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                H.; Lazure, C.; Solomon,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Biochem. Biophys. Res. Commun. 173, 1161-1168, 1990
A;Title: Granulins, a novel class of peptide from leukocytes.
A;Reference number: A36698; MUID:91097544; PMID:2268320
A;Accession: E36698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Wolecule type: protein
*Residues: 279-307, SB',310-324,'T',326,'X',328,'Q' <BAT>
R;Bhandari, V.; Glaid, A.; Bateman, A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 65; DB 2; Pred. No. 0.00058;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      nandari, V.; Giaid, A.; Bateman, A. ocrinology 133, 2682-2689, 1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Match 89.0%;
Local Similarity 85.7%;
les 12; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11:11111111 11
SAKGTKCLRKKTPR 575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 SARGTKCLRKKIPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Molecule type: protein
A;Residues: 280-300 <SHO>
A;Accession: B36199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Molecule type: protein
Residues: 205-226 <SH2>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bateman, A.; Belcourt,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Molecule type: DNA
A; Residues: 1-593 <BHA>
R; Plowman, G.D.; Green,
J. Biol. Chem. 267, 130
                                                                                                                                                                                                                                                                                                                                         A; Molecule type: mRNA
A; Residues: 1-589 <PLO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Accession: A36199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Accession: 153272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Accession: JC1284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
```

ö

Gaps

Gaps

ö

```
C; Accession: E64450
R; Bult, C.J.; White, O.; Olsen, G.J.; Zhou, L.; Fleischmann, R.D.; Sutton, G.G.; Reich, C.J.; White, O.; Olsen, G.J.; Zhou, L.; Fleischmann, R.D.; Sutton, G.G.; Reich, C.J.; Overbeek, R.; Kirkness, E.F.; Weinstock, K.G.; Merrick, J.M.; Gloc science 273, 1058-1073, 1996
A; Authors: Kaine, B.P.; Borodovsky, M.; Klenk, H.P.; Fraser, C.M.; Smith, H.O.; I A; Tile: Complete genome sequence of the methanogenic archaeon, Methanococcus jan A; Reference number: A64300; MUID:96337999; PMID:8688087
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Cross-references: GB:U67562; GB:L77117; NID:92826374; PIDN:AAB99210.1; PID:9159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Cross-references: EMBL: 272515; PIDN: CAA96685.1; GSPDB: GN00023; CESP:T11A5.5 A; Experimental source: clone T11A5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Status: preliminary; nucleic acid sequence not shown; translation not shown A;Wolecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C; Species: Methanococcus jannaschii
C; Date: 13-Sep-1996 #sequence_revision 13-Sep-1996 #text_change 21-Jul-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                    hypothetical protein T11A5.5 - Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Date: 15-Oct-1999 #sequence_revision 15-Oct^1999 #text_change 15-Oct-1999
C;Superfamily: glutamine-tRNA ligase; glutamine-tRNA ligase homology
C;Reywords: ligase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Match 53.4%; Score 39; DB 2; Length 424; Local Similarity 87.5%; Pred. No. 27; Conservative 0; Mismatches 1; Indels
                                                                                                Length 555;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 288;
                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         hypothetical protein MJ1206 - Methanococcus jannaschii
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Map position: REV1149948-1148674
A;Start codon: GTG
C;Superfamily: conserved hypothetical protein MJ1206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 39; DB 2;
Pred. No. 19;
1; Mismatches
                                                                                                ;
                                                                                             Score 40; DB 2
Pred. No. 22;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          R;McMurray, A.
submitted to the EMBL Data Library, May 1996
A;Reference number: 219939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     53.4%;
                                                                                             Query Match 54.8%;
Best Local Similarity 72.7%;
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 53.4
Best Local Similarity 70.0
Matches 7; Conservative
                                                                                                                                                                                                                                                          167 AEGTACERAKI 177
                                                                                                                                                                                                                      2 ARGTKCLRKKI 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |:||| || |
145 GSKCLLKKAP 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4 GTKCLRKKIP 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        259 KCLRSKIP 266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6 KCLRKKIP 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Residues: 1-288 <WIL>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Residues: 1-424 <BUL>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A, Gene: CESP:T11A5.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Accession: T24824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Accession: T24824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Map position: A; Introns: 202/2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local S
Matches 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Genetics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 R; Parkhill, J.; Wren, B.W.; Thomson, N.R.; Titball, R.W.; Holden, M.T.G.; Prentice, M.B. deno-Tarraga, A.M.; Chillingworth, T.; Cronin, A.; Davies, R.M.; Davis, P.; Dougan, G.; Li, M.; Rutherford, R.; Simmonds, M.; Skelton, J.; Stevens, R.; Whitehead, S.; Barrell, Nature 413, 523-527, 2001
A; Title: Genome sequence of Yersinia pestis, the causative agent of plague.
A; Reference number: AB0001; MUID:21470413; PMID:11586360
; Reich, C.I.; Overbeek, R.; Kirkness, E.F.; Weinstock, K.G.; Merrick, J.M.; Glodek, A.; Schon, J.D.; Sadow, P. M.; Hanna, M.C.; Cotton, M.D.; Roberts, K.M.; Hurst, M.A. Science 273, 1058-1073, 1996
A; Authors: Kaine, B.P.; Borodovsky, M.; Klenk, H.P.; Fraser, C.M.; Smith, H.O.; Woese, C.A.; A; Title: Complete genome sequence of the methanogenic archaeon, Methanococcus jannaschli A; Reference number: A64300; MUID:96337999; PMID:8688087
A; Accession: G64476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  R;Vidal-Taboada, J.M.; Lu, A.; Pique, M.; Pons, G.; Gil, J.; Oliva, R. Biochem. Biophys. Res. Commun. 272, 156-163, 2000
A;Title: Down syndrome critical region gene 2: Expression during mouse development and A;Reference number: JC7279
A;Accession: JC7279
                                                                                                                                                                                                             A;Status: preliminary; nucleic acid sequence not shown; translation not shown A;Molecule type: DNA A;Molecule type: DNA A;Residues: 1-452 <BUL> A;Residues: 1-452 <BUL> A;Cross-references: GB:U67582; GB:L77117; NID:g1592064; PIDN:AAB99426.1; PID:g1500295; C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                glutamine-tRNA ligase (EC 6.1.1.18) [imported] - Yersinia pestis (strain CO92)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Cross-references: GB: AL590842; PIDN: CAC92873.1; PID: 915980617; GSPDB: GN00175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Species: Versinia pestis
Date: 02-Nov-2001 #sequence_revision 02-Nov-2001 #text_change 03-Jun-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        C;Species: Mus musculus (house mouse)
C;Date: 18-Aug-2000 #sequence_revision 18-Aug-2000 #text_change 02-Sep-2000
C;Accession: JC7279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Down syndrome critical region gene-2 (DSCR2) protein - mouse N:Alternate names: chromosome 21-leucine rich protein (C21-LRP)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Map position: 21
C;Superfamily: human 32.9K leucine-rich protein (chromosome 21)
C;Keywords: Down's syndrome; transmembrane protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 40; DB 2; Length 289;
Pred. No. 13;
1; Mismatches 4; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 56.2%; Score 41; DB 2; Length 452; Best Local Similarity 87.5%; Pred. No. 12; Matches 7; Conservative 1; Mismatches 0; Indels.
                                                                                                                                                                                                                                                                                                                                                                                                       Superfamily: conserved hypothetical protein MJ1416
                                                                                                                                                                                                                                                                                                                                                                       A;Map position: REV1378352-1376994
C;Superfamily: conserved hypotheti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity 61.5%;
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Cross-references: GB: AJ238270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 SARGTKCLRKKIP 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6 KCLRKKIP 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              :||||||||
10 RCLRKKIP 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Molecule type: mRNA
A; Residues: 1-289 <VID>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule type: DNA
A; Residues: 1-555 <KUR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gene: dscr2/c21-lrp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Accession: AB0321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Accession: AB0321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
```

ö

Gaps

ö

ö

Gaps

```
A. Experimental Source: cultivar Columbia; BAC clone F17C15
R. Kieber, J.J.; Rothenberg, M.; Roman, G.; Feldmann, K.A.; Ecker, J.R.
Cell 72, 427-441, 1993
A.Title: CTR1, a negative regulator of the ethylene response patimay in Arabidopsis
A. Reference number: A45178; WUID:93161417; PMID:8431946
A. Contents: Columbia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      hypothetical protein At2937520 [imported] - Arabidopsis thaliana
N;Alternate names: hypothetical protein F13M22.2
C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Date: 05-Mar-1999 #sequence_revision 05-Mar-1999 #text_change 16-Feb-2001
C;Accession: T02518; G84793
R;Rounsley, S.D.; Kaul, S.; Lin, X.; Ketchum, K.A.; Crosby, M.L.; Brandon, R.C.; Sy submitted to the EmBL Data Library, June 1998
A;Description: Arabidopsis thaliana chromosome II BAC F13M22 genomic sequence.
A;Reference number: 214677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                **Ribrary Structure and Structure AC2, 761-768, 1999

**Ribrary Structure AC2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Map position: 5
A;Introns: 216/3; 317/2; 364/3; 399/2; 468/1; 560/1; 573/3; 596/3; 630/2; 658/3; 69
A;Note: F17C15.150
C;Superfamily: unassigned Ser/Thr or Tyr-specific protein kinases; protein kinase h
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           489/1; 550/2; 56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Cross-references: GB: AE002093; NID: 93236235; PIDN: AAC23623.1; GSPDB: GN00139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Introns: 189/3; 212/3; 282/3; 304/1; 366/2; 388/2; 415/3; 433/2; C; Superfamily: Arabidopsis thaliana hypothetical protein F4P12.380
                                                                                                                                                                                                                                                                                                                                                                                                                                A; Status: preliminary; not compared with conceptual translation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 821;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 825;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Molecule type: DNA
A;Residues: 1-825 <ROU>
A;Cross-references: EMBL:AC004684; NID:93236234; PID:93236235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Note: sequence extracted from NCBI backbone (NCBIP:124878)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 38; DB 2;
Pred. No. 74;
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                F:549-812/Pomain: protein kinase homology <KIN>F:557-565/Region: protein kinase ATP-binding motif
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 38; DB 2
Pred. No. 74;
3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Status: translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          52.1%;
57.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 52.1%;
Best Local Similarity 50.0%;
Matches 6; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                :| | || | :|||
761 AAVGFKCKRLEIPR 774
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KIE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 SARGTKCLRKKIPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RGTKCLRKKIPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Gene: F13M22.2; At2g37520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Molecule type: DNA
A; Residues: 1-468,470-821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-821 <BEV>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1-825 <STO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Accession: T02518
                                                                                                                                                                                                                                                                                                                                                                                                A; Accession: A45178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Map position: 2
A; Introns: 189/3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C; Keywords: ATP
F; 549-812/Domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              å
                                                                                                                                                                                                                                                                      C; Accession: S75598 S; Kotani, H.; Tanaka, A.; Asamizu, E.; Nakamura, Y.; Miyajima, N.; Kaneko, T.; Sato, S.; Kotani, H.; Tanaka, A.; Asamizu, E.; Nakamura, S.; Shimpo, S.; Takeuchi, C.; Wada, T.; Watanabe, A.; Yamada, M.; Yasuda DNA Res. 3, 109-136, 1996 A; Title: Sequence analysis of the genome of the unicellular cyanobacterium Synechocystis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            R;Parkhill, J.; Wren, B.W.; Thomson, N.R.; Titball, R.W.; Holden, M.T.G.; Prentice, M.B. deno-Tarraga, A.W.; Chillingworth, T.; Cronin, A.; Davies, R.M.; Davis, P.; Dougan, G.; il, M.; Rutherford, R.; Simmonds, M.; Skelton, J.; Stevens, R.; Whitehead, S.; Barrell, Nature 413, 523-527, 2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Cross-references: EMBL:D90912; GB:AB001339; NID:g1653228; PIDN:BAA18159.1; PID:d101889
A;Note: the nucleotide sequence was submitted to the EMBL Data Library, June 1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NiAlternate names: protein F17C15.150
C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Date: 20-Apr-2000 #sequence_revision 20-Apr-2000 #text_change 17-Nov-2000
C;Accession: T48400; A45178
R;Bevan, M.; Pohl, T.; Weizenegger, T.; Bancroft, I.; Newes, H.W.; Rudd, S.; Lemcke, K.; Baban, M.; Reference number: 224492
A;Reference number: 224492
A;Accession: T48400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Cross-references: GB: AL590842; PIDN: CAC92219.1; PID: g15980931; GSPDB: GN00175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      probable aminotransferase YPO2975 [imported] - Yersinia pestis (strain CO92) C; Species: Yersinia pestis C; Date: 02-Nov-2001 #sequence_revision 02-Nov-2001 #text_change 09-Nov-2001 C; Accession: ABO361 R; Parkhill, J; Wren, B.W.; Thomson, N.R.; Titball, R.W.; Holden, M.T.G.; Pre
                                                                                                                                                                                                                              C;Date: 25-Apr-1997 #sequence_revision 25-Apr-1997 #text_change 08-Oct-1999 C;Accession: S75598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Title: Genome sequence of Yersinia pestis, the causative agent of plague. A;Reference number: AB0001; MUID:21470413; PMID:11586360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Reference number: S74322; MUID:97061201; PMID:8905231
A;Accession: S7598
A;Status: nucleic acid sequence not shown; translation not shown
A;Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 411;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2; Length 942;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           serine/threonine-protein kinase ctrl - Arabidopsis thaliana
                                                                    poly(A) polymerase - Synechocystis sp. (strain PCC 6803)
N;Alternate names: protein s111253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pred. No. 54;
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 38; DB
Pred. No. 40;
3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 39;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            C;Genetics:
C;Gene: YPO2975
A;Gene: YPO2975
C;Superfamily: aspartate transaminase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 52.1%;
Best Local Similarity 50.0%;
Matches 7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TSRGIPCLRRAISR 85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 SARGTKCLRKKIPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity 66.7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AARGNKLLRKQI 876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 SARGTKCLRKKI 12
                                                                                                                                                     C; Species: Synechocystis sp. A; Variety: PCC 6803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Accession: AH0361
A; Status: preliminary
A; Molecule type: DNA
A; Residues: 1-411 <KUR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Residues: 1-942 <KAN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Gene: pcnB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        :Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
```

Gaps

```
A;Cross-references: EMBL:AL356173; GSPDB:GN00116; NCSP:B14D6.660
A;Experimental source: BAC clone B14D6; strain OR74A
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 327;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 2;
50;
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 37; DB 2
Pred. No. 50;
3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8, 2003, 16:29:27
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity 54.5%;
Matches 6; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                276 RGPQCLRRRPP 286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3 RGTKCLRKKIP 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Search completed: July
Job time: 16.1795 secs
                                                                                                                                                                            A; Residues: 1-327 <SCH>
                                                                                                                                                                                                                                                                                            C;Genetics:
A;Gene: NCSP:B14D6.660
A;Map position: 6
                                                                                              A;Status: preliminary
                                                                                                                                         A; Molecule type: DNA
                                                       Accession:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                         R;Theologis, A.; Ecker, J.R.; Palm, C.J.; Federspiel, N.A.; Kaul, S.; White, O.; Alonso, Chio, C.W.; Chung, M.K.; Conn, L.; Conway, A.B.; Conway, A.R.; Creasy, T.H.; Dewar, K.; ansen, N.F.; Hughes, B.; Huizar, L.
Nature 408, 816-820, 2000
Mature 408, 816-820, 817, Mature 408, 818, Mature 408, 818, Mature 408, Mat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C;Species: Neurospora crassa
C;Date: 02-Jun-2000 #sequence_revision 02-Jun-2000 #text_change 02-Jun-2000
C;Accession: T49514
R;Schulte, U.; Aign, V.; Hoheisel, J.; Brandt, P.; Fartmann, B.; Holland, R.; Nyakatura, submitted to the Protein Sequence Database, May 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Cross-references: GB:AE001286; GB:AE001273; NID:93328516; PIDN:AAC67718.1; PID:9332855
A;Experimental source: serotype D, strain UW-3/Cx
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A:Title: Genome sequence of an obligate intracellular pathogen of humans: Chlamydia trac
A;Reference number: A71570; MUID:99000809; PMID:9784136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Kalman, S.; Lammel, C.J.; Fan, J.; Marathe, R.; Aravind, L.; Mitchell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Shinn, P.; Southwick, A.M.; Sun, H.; Tallon,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            orobable polysaccharide hydrolase - Chlamydia trachomatis (serotype D, strain UW3/Cx)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Cross-references: GB:AE005172; NID:95734740; PIDN:AAD50005.1; GSPDB:GN00141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Species: Chlamydla trachomatis
.Date: 13-Sep-1998 #sequence_revision 13-Sep-1998 #text_change 08-Oct-1999
                                                                                                                                                                                                                                                                                            #sequence_revision 02-Mar-2001 #text_change 31-Mar-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Rizzo, M.; Rooney, T.; Rowley, D.; Sakano, H.
A;Authors: Salzberg, S.L.; Schwartz, J.R.; Shino, P.; Southwick, A.M.; S.
ker, M.; Wu, D.; Yu, G.; Fraser, C.M.; Venter, J.C.; Davis, R.W.
A;Title: Sequence and analysis of chromosome 1 of the plant Arabidopsis.
A;Reference number: A86141; MUID:21016719; PMID:11130712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 341;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 37; DB 2; Length 283;
Pred. No. 44;
4; Mismatches 2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    hypothetical protein B14D6.660 [imported] - Neurospora crassa
                                                                                                                                                                                                          hypothetical protein [imported] - Arabidopsis thaliana C;Species: Arabidopsis thaliana (mouse-ear cress) C;Date: 02-Mar-2001 #sequence_revision 02-Mar-2001 #tex
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 37.5;
Pred. No. 42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                51.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Wolecule type: DNA
A;Residues: 1-283 <ARN>
A;Cross-references: GB:AE001286;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        50.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               :|| ||||||:
186 KGTITSKCLRKKV 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3 RGT---KCLRKKI 12
· 802 KGISMLEKKVPK 813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 50.7
Best Local Similarity 45.5
Matches 5; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | :|: |::|}
157 GGRCIHKQLPR 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4 GTKCLRKKIPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       R;Stephens, R.S.; Kalman, Science 282, 754-759, 1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
Matches 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Molecule type: DNA
A; Residues: 1-341 <STO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                       C; Accession: C86246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Accession: C86246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Accession: C71554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Map position: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Gene: ydho
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 14
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
```

GenCore version 5.1.6 Copyright (c) 1993 - 2003 Compugen Ltd.

OM protein - protein search, using sw model

July 8, 2003, 16:16:30; Search time 6.82051 Seconds (without alignments) 85.136 Million cell updates/sec Run on:

US-09-824-647-5 73 1 SARGTKCLRKKIPR 14

Title: Perfect score: Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

112892 seqs, 41476328 residues Searched:

112892 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

SwissProt\_40:\* Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

#### SUMMARIES

		Description	P28798 mus musculu	P23785 r granulins	÷	y	homo sapi	Q58603 methanococc	Q8veel mus musculu	044603 buchnera ap	arabidops	P39671 agrobacter1	Q57878 methanococc		P75296 mycoplasma		P28797 cavia porce		P44126 haemophilus	_	P40137 stigmatella	Q9ff17 arabidopsis	P23475 mus musculu	_		Q9kkq7 vibrio chol	P08638 saccharomyc	028628 oryctolagus	-	P33467 feline ente	083969 treponema p	Ē		ď	Q64299 mus musculu
		i !																	٠.																
3		1													_			_	_																٠
SUMMAKIES		;	USE	E	MAN	RPE	HUMAN	ETJA	MOUSE	ocso	RATH	GRTU	ETJA	RYBB	YCPN	HEHY	VPO	UMAN	AEIN	USE	TIAU	RATH	OUSE	OUSE	UCAI	IBCH	EAST	ABIT	YAPA	FE3	REPA	YCTO	CICA	EAST	USE
200		;	SRN_MOUSE	N_RAT	GRN_HUMAN	SYQ_YERPE	BD03_H	rcoe_metja	LMC1_M	TRPC_BUCSC	CTR1_ARATH	PGMU_AGRTU	Y436_METJA	DRTS_TRYBB	X338_MYCPN	DPOL_THEHY	GRN_CAVPO	BAXC_HUMAN	YFCN_HAEIN	RL7_MOUSE	CYAA_STIAU	ALG6_ARATH	KU70_MOUSE	CACP_MOUSE	PTMA_BUCAI	PTMA_VIBCH	LEUR_YEAST	AKA9_RABIT	RK28_CYAPA	V6B_CVFE3	RECR_TREPA	KGUA_MYCTU	BEND_ACICA	REG2_YEAST	NOV_MOUSE
		<b>a</b> :	GR	GRN	GR	SY	B	Ϋ́	Ξ	TR	ដ	ፚ	Χđ	ä	Υ3	ద	GR	BA	YF	꿆	Ç	Z	B	S	뒶	Εď	Ξ	AK	æ	9 <u>A</u>	æ	KG	BE	æ	2
		8 :	٦	-	Н	-	-		-	Н	Н	-	-	-	-	~	Н	-	-	-		-	-	-	7	-	Н	₹	Н	Н	-	-		-	-
		Length	589	288	593	555	67	424	365	461	821	542	220	527	1300	1668	591	41	167	270	424	533	608	627	632	649	886	1087	70	176	201	208	261	338	354
			0	89.0	ď.	8.	₹.	3.4	2.1	٦.	-:	<u>.</u>	-	۳.	<u>.</u>	m.	9	6	0	٥.	6.	6.	o.	ō.	6.	6.	o,	m,	9	٠	•	•	•	۰	9
ď	Query	Match	100	8	79		53	23	22		52	20	20	49	49	49	48	47	47	47	47	47	47	47	47	47	47	47	46	46	46	46	46	46	46
		Score	73	65	28	40	39	39	38	38	38	37	37	36	36	36	35.5	32	35	35	32	35	35	32	32	35	35	34.5	34	34	34	34	34	34	34
	Result	NO.	-	7	e	₹	S	9	7	60	σ	10	11	12	13.	14	15	16	17	18	19	20	21	22	23	24	25	36	27	78	53	30	31	35	33

P48745 homo sapien	Q9uyv6 pyrococcus	Q97pr0 streptococc	Q9kta6 vibrio chol	P57847 pasteurella	Q03162 saccharomyc	Q9cly8 pasteurella	Q58446 methanococc	057472 brachydanio	000339 homo sapten	OO8746 mus musculu	huma	
NOV_HUMAN	Y927_PYRAB	SYN_STRPN	SYO_VIBCH	SYQ_PASMU	YMZ0_YEAST	PTMA_PASMU	RPA2_METJA	CHRD_BRARE	MTN2_HUMAN	MTN2_MOUSE	POL_HV1EL	
Н	-	Н	-	-	Н	-	-	٦	Н	-	-	
357	405	447	556	559	620	624	829	940	926	926	1002	
46.6	46.6	46.6	46.6	46.6	46.6	46.6	46.6	46.6	46.6	46.6	46.6	
34	34	34	34	34	34	34.	34	34	34	34	34	
34	35	36	37	38	39	40	41	42	43	44	45	

### ALIGNMENTS

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Biochem. Biophys. Res. Commun. 173:1161-1168(1990).
-!- FUNCTION: GRANULINS HAVE POSSIBLE CYTORINE-LIKE ACTIVITY. THEY MAY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Plowman G.D., Green J.M., Neubauer M.G., Buckley S.D., McDonald V.L., Todaro G.J., Shoyab M.;
"The epithelin precursor encodes two proteins with opposing activities on epithelial cell growth.";
J. Biol. Chem. 267:13073-13078(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PLAY A ROLE IN INFLAMMATION, WOUND REPAIR, AND TISSUE REMODELING.
TISSUE SPECIFICITY: UBIQUITOUS; MOST ABUNDANT IN THE SPLEEN AND
SEVERAL TISSUES OF ENDOCRINE SIGNIFICANCE.
                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-NOV-1991 (Rel. 20, Created)
01-DEC-1992 (Rel. 24, Last sequence update)
16-CCT-2001 (Rel. 40, Last annotation update)
Granulins precursor (Acrogranulin) [Contains: Granulin 1 (Granulin G);
Granulin 2 (Granulin F); Granulin 3 (Granulin B) (Epithelin 2);
Granulin 4 (Granulin A) (Epithelin 1); Granulin 5 (Granulin C);
Granulin 6 (Granulin D); Granulin 7 (Granulin E)].
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
                                                                                                                                                 .) (POTENTIAL)
                                                                                                                                                                               (POTENTIAL)
                                                                                                                                                                                                 .) (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                              ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE OF 204-225 AND 279-299.
MEDLINE-91045907; PubMed-2236009;
Shoyab M., McDonald V.L., Byles C., Todaro G.J., Plowman G.D.;
"Epithelins 1 and 2: isolation and characterization of two
cysteine-rich growth-modulating proteins.";
Proc. Natl. Acad. Sci. U.S.A. 87:7912-7916(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Solomon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "The complementary deoxyribonucleic acid sequence, tissue distribution, and cellular localization of the rat granulin
                                                                                                                                                                                                                                                                                                                                                100.0%; Score 73; DB 1; Length 589; 100.0%; Pred. No. 9e-06;
                                                                                                                                                                                                                                                                                                                                                                                                           0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A., AND SEQUENCE OF 204-259 AND 278-334.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bateman A., Belcourt D.R., Bennett H.P., Lazure C., Sold
"Granulins, a novel class of peptide from leukocytes.";
Blochem. Biophys. Res. Commun. 173:1161-1168(1990).
                                                                                                                                                                                                                                                                                          1DE8229C413CB787 CRC64;
GRANULIN 3.
GRANULIN 4.
GRANULIN 5.
GRANULIN 6.
GRANULIN 7.
N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
                                                                                                                                                                                                       (GLCNAC.
                                                                                                                                                                               (GLCNAC.
                                                                                                                                                                                                                                                                  -> R (IN REF.
                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bhandari V., Giaid A., Bateman A.; "The complementary deoxyribonucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Endocrinology 133:2682-2689(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TISSUE-Bone marrow;
MEDLINE-91097544; PubMed-2268320;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE-94062640; PubMed-8243292;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE-92317004; PubMed-1618805;
                                                                                                                                                                                                                                                                                                                                                                                                           ;
;
                                                                                                                                                                                                                                                                  ۵
                                                                                                                                                                                                                                                                                             63458 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 SARGTKCLRKKIPR 14
                                                                                                                                                                                                                                                                                                                                                                          Local Similarity 100.
es 14; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rattus norvegicus (Rat).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE OF 278-328.
                                                                                                                                                                                                                                                                                          589 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  precursor
  PEPTIDE
PEPTIDE
PEPTIDE
PEPTIDE
PEPTIDE
CARBOHYD
                                                                                                                                                                         CARBOHYD
                                                                                                                                                                                                                                  CARBOHYD
                                                                                                                                                                                                                                                                  CONFLICT
                                                                                                                                                                                                                                                                                          SEQUENCE
                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 2
GRN_RAT
     55555555555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HERER REPORTED TO THE REPORT OF THE REPORT O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
```

```
use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an nemail to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                           This SWISS-PROT entry is copyright. It is produced through a collaboration
                                         rmatics and the EMBL outstation
There are no restrictions on 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GRULHUMAN STANDARD; PRT; 593 AA.
P28799; P23781; P23782; P23784; Q9BWE7;
D1-NOV-1991 (Rel. 20, Created)
O1-NOV-1991 (Rel. 24, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Granulins precursor (Acrogranin) [Contains: Paragranulin; Granulin 1 (Granulin 6); Granulin 2 (Granulin 7); Granulin 7 (Granulin 8); Granulin 8); Granulin 7 (Granulin 8); Granulin 9); Granulin 7 (Granulin 8);
                                      between the Swiss Institute of Bioinformatics and the EMBL outstati
the European Bioinformatics Institute. There are no restrictions on
use by non-profit institutions as long as its content is in no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE-92179253; PubMed-1542665;
Bhandari V., Palfree R.G.E., Bateman A.;
Isolation and sequence of the granulin precursor cDNA from human bone marrow reveals tandem cysteine-rich granulin domains.";
Proc. Natl. Acad. Sci. U.S.A. 89:1715-1719(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostom1;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo
                                                                                                                                                                                                                                                                                                                                                                                                                            (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 65; DB 1; Length 588;
Pred. No. 0.00026;
.; Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               113D434F7E099B31 CRC64;
                                                                                                                                                                                                                                                                                                                        GRANULIN 2.
GRANULIN 3.
GRANULIN 4.
GRANULIN 6.
GRANULIN 6.
GRANULIN 7.
N-LINKED (GLCNAC. . . ) (1)
N-LINKED (GLCNAC. . . ) (2)
S -> FP (IN REF. 2).
TK -> SB (IN REF. 4).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (IN REF. 4)
(IN REF. 2)
-1- PTM: GRANULINS ARE DISULFIDE BRIDGED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A., AND PARTIAL SEQUENCE
                                                                                                                                                                                                                                                                     Signal
                                                                                                                                                                                                                                                                                                              GRANULIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  . · ·
                                                                                                                                                                                                                                         400277; GRAN; 7.
PS00799; GRANULINS; 7.
; Repeat; Glycoprotein;
                                                                                                                                                                  PIR; A36199; A36199.
PIR; B36199; B36199.
PIR; E36698; E3698.
INTERPLO; IPRO00118; Granulin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               63369 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        89.0%;
                                                                                                                                      EMBL; M97750; AAA16903.1; -. EMBL; X62322; CAA44198.1; -.
                                                                                                                                                                                                                          Pfam; PF00396; granulin; 7.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local Similarity 85.7
Matches 12; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sapiens (Human).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               388
588 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FISSUE-Bone marrow;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                     Cytokine;
                                                                                                                                                                                                                                                                                                                                                                                                              CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                        CONFLICT
                                                                                                                                                                                                                                                       PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                          CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CONFLICT
                                                                                                                                                                                                                                                                                                              PEPTIDE
PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                   PEPTIDE
                                                                                                                                                                                                                                                                                                                                                        PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                       PEPTIDE
                                                                                                                                                                                                                                                                                   SIGNAL
                                                                                                                                                                                                                                            SMART;
                                                                                                                                                                                                                                                                                                   CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GRN_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 3
 ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9
```

REVISIONS, SEQUENCE FROM N.A.

us-09-824-647-5.rsp

```
SYQ_YERPE
Q8ZDD9;
                                                  CARBOHYD
CARBOHYD
                                                                   CARBOHYD
VARSPLIC
VARIANT
                                  CARBOHYD
CARBOHYD
                                                                                                                       SEQUENCE
                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                             rersinia
                                                                                                      CONFLICT
                                                                                                                CONFLICT
                 PEPTIDE
                                                                                                                                                                                                                                                                                            (GlnRS)
                          PEPTIDE
                                                                                                                                                                                                                               SYO_YERPE
                                                                                                                                                                                                                       RESULT
                                                                                                                                                                                                                                                         q
2111111111111111
                                                                                                                                                                            ò
                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its
                                                                                                                                                                                                                                                                                                                                                                                                         use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                 Plowman G.D., Green I.M., Neubauer M.G., Buckley S.D., McDonald V.L., Todaro G.J., Shoyab M.;
"The epithelin precured encodes two proteins with opposing activities on epithelial cell growth.";
J. Biol. Chem. 267:13073-13078(1992).
        Bhandari V., Bateman A.; "Structure and chromosomal location of the human granulin gene."; Biochem. Biophys. Res. Commun. 188:57-63(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Glycoprotein; Signal; Alternative splicing;
                                                                                                                               TISSUE-Brain;
Yu W., Gibbs R.A.;
Submitted (MAR-1998) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                            Submitted (JUL-2001) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                             SEQUENCE OF 206-233; 281-336; 364-396 AND 442-447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACROGRANIN.
PARAGRANULIN.
GRANULIN 1.
GRANULIN 2.
GRANULIN 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                    or send an email to license@isb-sib.ch)
                                                                                                                                                                 SECUENCE FROM N.A. (ISOFORMS 1 AND 2).
TISSUE-Cervix, and Lung;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; M75161; AAA58617.1; ALT_SEQ.
                                                   TISSUE-Kidney;
MEDLINE-92317004; PubMed-1618805;
MEDLINE-93038704; Pubmed-1417868;
                                                                                                                                                                                                                               MEDLINE=91097544; PubMed=2268320;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PROSITE; PS00799; GRANULINS; 7.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL; AR055008; AAC09359.1; -. EMBL; BC000324; AAH00324.1; -. EMBL; BC010577; AAH10577.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           nterPro; IPR000118; Granulin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pfam; PF00396; granulin; 7.
SMART; SM00277; GRAN; 7.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PIR; A38118; GYHU.
PIR; D36698; D36698.
PIR; JC1284; JC1284.
Genew; HGNC:4601; GRN.
                                                                                                                       SEQUENCE FROM N.A.
                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Repeat;
                                                                                                                                                                                                                        TISSUE=Leukocyte;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Polymorphism.
SIGNAL
                                                                                                                                                                                     Strausberg R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MIM; 138945;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              :ytokine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PEPTIDE
PEPTIDE
PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CHAIN
```

```
between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This SWISS-PROT entry is copyright. It is produced through a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AEDINE-21470413; PubMed=11586360; ParkINE-21470413; PubMed=11586360; ParkInil J., Waren B.W., Thomson N.R., Titball R.W., Holden M.T.G., Prentice M.B., Sebalida M., James K.D., Churcher C., Mungall K.L., Baker S., Basham D., Bentley S.D., Brooks K., Cerdeno-Tarraga A.M., Chillingworth T., Cronin A., Davies R.M., Davis P., Dougan G., Leather S., Moule S., Oyston P.C.F., Quail M., Rutherford K., Saltmon J., Stevens K., Whitehead S., Barrell B.G.; "Genome sequence of Yersinia pestis, the causative agent of plague."; Nature 413:523-527(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -! - SIMILARITY: BELONGS TO CLASS-I AMINOACYL-TRNA SYNTHETASE FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       15-JUN-2002 (Rel. 41, Created)
15-JUN-2002 (Rel. 41, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Glutaminyl-tRNA synthetase (EC 6.1.1.18) (Glutamine--tRNA ligase)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bacteria; Proteobacteria; gamma subdivision; Enterobacteriaceae;
                                                                                                                                         (POTENTIAL).
                                                                                                                                                                                                                          (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -1- CATALYTIC ACTIVITY: ATP + L-glutamine + tRNA(Gln) - AMP + diphosphate + L-glutaminyl-tRNA(Gln).
-1- SUBUNIT: Monomer (By similarity).
-1- SUBCELLUTAR LOCARION: Cytoplasmic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 58; DB 1; Length 593;
Pred. No. 0.005;
3; Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                                      S -> H (IN REF. 6).
W -> H (IN REF. 6).
4E402BDB16DE2819 CRC64;
                                                                                GRANDLIN 7.

"LINKED GECNAC. . . ) (I
N-LINKED GECNAC. . . ) (I
MISSING (IN ISOFORM 2).
                                                                                                                                                                                                                                                                                      G -> Q.
/FTId-VAR_003445
GRANULIN 4.
                             GRANULIN 5
GRANULIN 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro; IPRO04514; GlnS.
InterPro; IPRO00924; Glu_tRNA-synt_lc.
InterPro; IPRO01412; tRNA-synt_l.
Pfam; PF00749; tRNA-synt_lc; 1.
                          GRANULIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TIGREAMS; TIGRO0440; GINS; 1.
PROSITE; PS00178; AA_TRNA_LIGASE_I;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; AJ414153; CAC92873.1; -..
                                                                                                                                                                                                                                                                                      G
                                                                                                                                                                                                                                                                                                                                                                                                       63473 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          79.58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           71.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 SARGTKCLRKKIPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity 71.4
Matches 10; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                    593 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GLNS OR YPO2630.
                                                                                                                                                                                                                                                                                                                                         219
                                                                                                                                                                                                                                                                                      454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Versinia pestis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=632;
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Garcia J.-R., Jaumann F., Schulz S., Krause A., Rodriguez-Jimenez J., Forssmann U., Adermann K., Kluver E., Vogelmeier C., Becker D., Hedrich R., Forssmann W.-G., Bals R.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A., SEQUENCE OF 23-67, FUNCTION, TISSUE SPECIFICITY, INDUCTION, AND MASS SPECTROMETRY.
TISSUE-KELALINOCYTES, Tracheal epithelium, and Lung epithelial cells; MEDLINE-21101950; PubMed-11085990;
Aminoacyl-tRNA synthetase; Protein biosynthesis; Ligase; ATP-binding;
                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "Discovery of new human defensins using a genomics-based approach.";
Gene 263:211-218(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Submitted (AUG-2000) to the EMBL/GenBank/DDBJ databases.
-1- FUNCTION: EXHIBITS ANTIMICROBIAL ACTIVITY AGAINST GRAM-POSITIVE
BACTERIA S.ANGENG AND S.POGENES, GRAM MEGATIVE BACTERIA
P.AERGGINOSA AND E.COLI AND THE YEAST C.ALBICANS. KILLS
MULTIRESISTANT S.AUREUS AND VANCOMYCIN-RESISTENT E.FAECIUM. NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "Isolation and characterization of human deta-defensin-3, a novel human inducible peptide antibiotic."; J. Biol. Chem. 276:5707-5713(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE-21125233; PubMed-11223260;
Jia H.P., Schutte B.C., Schudy A., Linzmeier R., Guthmiller J.M.,
Johnson G.K., Tack B.F., Mitros J.P., Rosenthal A., Ganz T.,
McCray P.B. Jr.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            P81534; Q9NPF6;
16-CCT-2001 (Rel. 40, Last sequence update)
16-UN-2002 (Rel. 40, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Beta-defensin 3 precursor (BD-3) (hBD-3) (Defensin like protein).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi,
Mammalla, Eutheria, Primates, Catarrhini, Hominidae, Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "Identification of a novel, multifunctional beta-defensin (human beta-defensin 3) with specific antimicrobial activity. Its interaction with plasma membranes of Xenopus cocytes and the induction of macrophage chemoattraction."; cell Tissue Res. 306:257-264(2001).
                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A. Adler D.A., Diamond G., Sheppard P., Holloway J., Presnell S., Jaspers S., Whitmore T., Fox B., Gosink J., Rixon M., Gao Z.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Haldeman B., O'Hara P.;
"EST and genomic database mining yield novel human and mouse
beta-defensins.";
                                                                                                                                                                                                                       Score 40; DB 1; Length 555;
Pred. No. 9.2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Harder J., Bartels J., Christophers E., Schroeder J.-M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Submitted (FEB-2000) to the EMBL/GenBank/DDBJ databases.
                                                                                              "KMSKS" REGION.
ATP (BY SIMILARITY).
AD3C68D6FB56C0B5 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    67 AA.
                                                                                                                                                                                                                                                                                             0; Mismatches
                                                               "HIGH" REGION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A., AND CHARACTERIZATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT;
                                                                   34 44 "H
268 272 "K
271 271 AT
555 AA; 63750 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STANDARD;
                                                                                                                                                                                                                                                                                             8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                        167 AEGTACLRAKI 177
                                                                                                                                                                                                                                                                                                                                                          2 ARGTKCLRKKI 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (Human)
                                                                                                                                                                                                                          Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE PROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                 Complete proteome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFB3 OR BD3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BD03_HUMAN
                                                                                                                                                                 SEQUENCE
                                                                                                                            BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BD03_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 5
   W HE HE CS
                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A PART A 
                                                                                                                                                                                                                                                                                                                                                          ð
```

```
ö
                                                                                                                                                                      This SWISS-PROT entry is copyright. It is produced through a collaboration between the SWiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute; There are no restrictions on its use by non-profit institutions as long as its content is in no way
                                                                                                                                                                                                                                              and for commercial
                                                                                                                                                                                                                                                       (See http://www.isb-sib.ch/announce/
                                  -i-TISSUE SPECIFICITY: HIGHLY EXPRESSED IN SKIN AND TONSILS, AND TO A LESSUE EXTENT IN TRACHEBA, UPERGOS, KIDNEY, THYMOS, ADENOLD, PHARYNX AND TONGUE. LOW EXPRESSION: IN SALIVARY GLAND, BONE MARROW, COLON, STOMACH, POLYP AND LARYNX. NO EXPRESSION IN SMALL INTESTINE.
-i-INDUCTION: BY INFECTION OF BACTERIA AND BY INTERFERON CAMMA.
-i-MASS SPECTROMERY: MW-5154.59; METHOD-ELECTROSPIRJY: RAMŠĒ-23-67.
-i-SIMILARITY: BELONGS TO THE BETA-DEFENSIN FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTAIN-JAL-1 / DSM 2661 / ATCC 43067;
MEDLINE-96337999; PubMed-8688087;
MEDLINE-96337999; PubMed-8688087;
Bult C.J., White O., Olsen G.J., Zhou L., Fleischmann R.D.,
Sutton G.G., Blake J.A., Fitzderald L.M., Clayton R.A., Gocayne J.D.,
Kerlavage A.R., Dougherty B.A., Tomb J.F., Adams M.D., Reich C.I.,
Overbeek R., Kirkness E.F., Weinstock K.G., Merrick J.M., Glodek A.,
Scott J.L., Geoghagen N.S.M., Weidman J.F., Fuhrmann J.L., Nguyen D.
Utterback T.R., Kelley J.M., Peterson J.D., Sadow P.W., Hanna M.C.,
Cotton M.D., Roberts K.M., Hill H.O., Woese C.R., Venter J.C.,
EComplete genome sequence of the methanogenic archaeon, Methanococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 67;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3; Indels
                                                                                                                                                                                                                                                Usage by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Archaea; Euryarchaeota; Methanococci; Methanococcales; Methanocaldococcaceae; Methanocaldococcus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
54266DE1C90D4B65 CRC64;
SIGNIFICANT HEMOLYTIC ACTIVITY WAS OBSERVED. SUBCELLULAR LOCATION: Secreted.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 1;
1.9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Science 273:1058-1073(1996).
-!- SIMILARITY: BELONGS TO THE UPF0095 FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (Rel. 39, Last sequence update) (Rel. 40, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BETA-DEFENSIN 3.
                                                                                                                                                                                                                                            modified and this statement is not removed. entities requires a license agreement (See )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    424 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ed. No. 1.9
Mismatches
                                                                                                                                                                                                                                                                              or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 39;
Pred. No. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro; IPR001855; Defensin_beta.
                                                                                                                                                                                                                                                                                                                EMBL; AJ237673; CAC03097.1; -. EMBL; AF295370; AAG02237.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   30-MAY-2000 (Rel. 39, Created)
30-MAY-2000 (Rel. 39, Last seq
16-oct-2001 (Rel. 40, Last anno
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pfam; PF00711; Defensin_beta; Antibiotic; Signal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Hypothetical protein MJ1206.
                                                                                                                                                                                                                                                                                                                                                                  EMBL; AB037972; BAB40572.1;
EMBL; AF301470; AAG22030.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7697 MM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             53.48;
                                                                                                                                                                                                                                                                                                                                                                                                    HGNC:15967; DEFB103
                                                                                                                                                                                                                                                                                                                                                  AAF73853.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Methanococcus jannaschii.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | || || || || || || || STRGRKCCRRK 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 SARGTKCLRKK 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         22
67
62
55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity
les 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID=2190;
                                                                                                                                                                                                                                                                                                                                                                                                                      MIM; 606611;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         annaschii.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    YCO6_METJA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    058603;
                                                                                                                                                                                                                                                                                                                                                                                                      Genew;
                                                                                                                                                                                                                                                                                                                                                    MBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CO6_METJA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 6
     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
```

between

Query Match

**08VEE1**;

LMCD1

LMC1 MOUSE

RESULT 7

a

õ

SARGVACLRCK 32

22

셤

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LINSECL MOI. BIOL. 4:4/ J9(1995).
-- FUNCTION: BIFUNCTIONAL ENZYME THAT CATALYZES TWO SEQUENTIAL STEPS
OF TRYPTOPHAN BIOSYNTHETIC PATHWAY. THE FIRST REACTION IS
CATALYZED BY THE ISOMERASE, CODED BY THE TRPF DOMAIN; THE SECOND
                                                                                                                                                                                                                                                                                                                                                                           Lai C.-T., Baumann P., Moran N.A.;
"Genetics of the tryptophan blosynthetic pathway of the prokaryotic endosymblont (Buchnera) of the aphid Schlechtendalia chinensis."; Insect Mol. Biol. 4:47-59(1995).
                                                                                                            July 2000 (Rel. 39, Last sequence update)
15-UNY-2002 (Rel. 41, Last annotation update)
phosphate proper an expected trape [Includes: Indole-3-glycerol phosphate synthese (EC 4.1.1.48) (IGPS); N-(5'-phosphorinbosyl)anthranilate isomerase (EC 5.3.1.24) (PRAI)].
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           rryptophan biosynthesis; Isomerase; Lyase; Multifunctional enzyme;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     INDOLE-3-GLYCEROL PHOSPHATE SYNTHASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            '-PHOSPHORIBOSYL) ANTHRANILATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 461;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               F202C81D6419D68D CRC64;
                                                                                                                                                                                                                                                       Buchnera aphidicola (subsp. Schlechtendalia chinensis)
Bacteria; Proteobacteria; gamma subdivision; Buchnera.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 38; DB 1;
Pred. No. 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ¥.
                                                                              461 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ISOMERASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
                                                                              PRT;
                                                                                                                                                                                                                                                                                                                                                        MEDLINE-95261545; PubMed-7742976;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 461 AA; 52783 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; U09185; AAA92795.1; -. HSSP; P00909; 1PII.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        52.1%;
75.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro; IPR001468; IGPS.
InterPro; IPR001240; PRAI.
Pfam; PF0018; IGPS; 1.
Probom; PP00151; IGPS; 1.
PROSITE; PS0014; IGPS; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity 75.0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STANDARD;
                                                                              STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       258
461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11:111:
346 CLKKKIPK 353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7 CLRKKIPR 14
                                                                                                                                                                                                                                                                                                  NCBI_TaxID=118110;
                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Decarboxylase.
                                                                          TRPC_BUCSC
Q44603;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTR1_ARATH 005609;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTR1_ARATH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 9
                                                                                                 2
2
2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                       the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                             ö
SWISS-PROT entry is copyright. It is produced through a collaboration een the Swiss Institute of Bioinformatics and the EWBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Strausberg R.;
Submitted (DEC-2001) to the EMBL/GenBank/DDBJ databases.
-!- SIMILARITY: CONTAINS 2 LIM DOMAINS. THE LIM DOMAIN BINDS 2 ZINC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 38; DB 1; Length 365;
Pred. No. 14;
0; Mismatches 3; Indels
                                                                                                                                                                                                                                                                                                               Score 39; DB 1; Length 424;
Pred. No. 11;
0; Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            40996 MW; DB8AA836364E47D3 CRC64;
                                                                                                                                                                                             InterPro: IPR002936; DNAprim_toprim.
Pfam; PF01751; Toprim; 1.
SNAFT; SN00493; TOPRIM; 1.
Hypotherical protein; Complete proteome.
SEQUENCE 424 AA; 47388 MW; C55EC7A05E0EB2C3 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15-JUN-2002 (Rel. 41, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
LIM and cysteine-rich domains protein 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             365 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PROSITE; PS004'8; LIM_DOMAIN_1; 2.
PROSITE; PS50023; LIM_DOMAIN_2; 2.
LIM domain; Metal-binding; Zinc; Repeat.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CYS-RICH.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   . . LIM 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LIM 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15-JUN-2002 (Rel. 41, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL; BC019124; AAH19124.1; -
InterPro; IPR001781; LIM.
                                                                                                                                                             EMBL; U67562; AAB99210.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 52.1%;
Best Local Similarity 72.7%;
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                     53.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pfam; PF00412; LIM; 2.
ProDom; PD000094; LIM; 2.
SMART; SM00132; LIM; 2.
                                                                                                                                                                                                                                                                                                                                  Best_Local Similarity 87.5
Matches 7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IMCI_MOUSE STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 SARGTKCLRKK 11
                                                                                                                                                                                                                                                                                                                                                                                                                                            259 KCLRSKIP 266
                                                                                                                                                                                                                                                                                                                                                                                                    6 KCLRKKIP 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          365 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=10090;
```

IONS

SEQUENCE

ò

DOMAIN

DOMAIN

ö

Gaps

```
AEDLINE-21016721; PubMed=11130714;

REDLINE-21016721; Research S., Kinch C., Wada T., Kohara M., Matanabe A., Yamada M., Yasuda M., Sato S., de la Bastide M., Ratanabe A., Yamada M., Yasuda M., Routhing T., Nelson J., Ramar E., Cordum H., Cordes M., Courtney U., Courtney W., Dante M., Rocheking T., Pepin K., Spieth J., Sekhon M., Armstrong J., Becker M., Ratenal E., Lamar E., Latreille P., R. Belter E., Cordum H., Cordes M., Courtney U., Courtney W., Dante M., Belter E., Cordum H., Rodwards J., Fryman J., Haakensen B., Lamar E., Latreille P., R. Honard S., Meyer R., Mulvaney E., Ozersky P., Riley A., Strowmatt C., Wagner-Norpherson C., Wollam A., Hoon See L., Vil D., Baker J., R. Rateille R., McComlle W.R., Wilson R.K., Murphy G., Bancroft I., Andries R., McCoulle W.R., Wilson R.K., Murphy G., Bancroft I., Andries W., Martiensen R., McCulle W.R., Wooljman P., Klein Lankhorst R., Hempel S., Relpauser U., Wedler H., Balke K., Weller E., Dohnson S., Hempel R., Relpauser T., Bothe G., Rose M., Hauf J., Berneiser S., Hempel R., Relpauser M., Lemberth S., Villarroel R., Gielen J., Ardiles W., Relpauser M., Lemberth S., Villarroel R., Schoof H., Eaglen P., McCaraia P., Mewes H., W., Bevan M., Fransz P.F.; Hallans E., Pedeuser E., Redlems E., Redlems P., Redlems P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Becker M.,
                                                                                                                                                                                                                                                                                 SECTION N.A.
STRAIN-cv. Columbia; TISSUE-Seedling;
MEDLINE-93161417; PubMed-8431946;
MEDLINE-93161417; PubMed-8431946;
Kieber J.J., Rothenberg M., Roman G., Feldmann K.A., Ecker J.R.;
"CTR1, a negative regulator of the ethylene response pathway in Arabidopsis, encodes a member of the raf family of protein kinases.";
Cell 72:427-441(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CATALYTIC ACTIVITY: ATP + a protein = ADP + a phosphoprotein.

TISSUE SPECIFICITY: EXPRESSED IN BOTH SEEDLINGS AND ADULT PLANTS.

MISCELLANEONS: CTRI MITANTS DISPLAY ETHYLENE-TREATED PHENOTYDES,

RESULTING IN PLANTS WITH SMALL, UNEXPANDED LEAVES AND WHOSE SEED

SIMILARITY: BELONGS TO THE SER/THR FAMILY OF PROTEIN KINASES.

MIL/RAF SUBFAMILI.
                                                                                                         CTRI OR AT5G03730 OR F17C15_150.

Arabidopsis thaliana (Mouse-ear cress).

Bukaryota, Viridiplantae, Streptophyta; Embryophyta; Tracheophyta;

Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae;

eurosids II; Brassicales; Brassicaceae; Arabidopsis:

NCBI_TAXID=3702;
                                    01-NOV-1995 (Rel. 32, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Serine/threonine-protein kinase CTR1 (EC 2.7.1.37).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Nature 408:823-826(2000).
01-NOV-1995 (Rel. 32, 01-NOV-1995 (Rel. 32, 16-OCT-2001 (Rel. 40,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PATHWAY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       thallana.
```

11- FUNCTION: ACTS AS A NEGATIVE REGULATOR IN THE ETHYLENE RESPONSE

This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).

InterPro; IPR000719; Euk pkinase. InterPro; IPR004040; STr pkinase. InterPro; IPR002290; Ser thr pkin AL162506; CAB82938.1; InterPro; InterPro;

EMBL; L08789; AAA32779.1; -

ö Gaps E->K: IN CTR1-4; EXHIBITS ETHYLENE-TREATED PHENOTYPE. D->E: IN CTR1-1; EXHIBITS ETHYLENE-TREATED PHENOTYPE. ö Si. Transferase; Serine/threonine-protein kinase; ATP-binding.

DOMAIN 65 69 POLY-GLY DB 1; Length 821; 4; Indels 2922D3DCD0CC15BC CRC64; PROTEIN KINASE.
ATP (BY SIMILARITY).
ATP (BY SIMILARITY). 2; Mismatches BY SIMILARITY PROSITE; PS00107; PROTEIN\_KINASE\_ATP; 1. PROSITE; PS00108; PROTEIN\_KINASE\_ST; 1. PROSITE; PS50011; PROTEIN\_KINASE\_DOM; 1. Score 38; Pred. No. POLY-GLY Pfam; PF00069; pkinase; 1. ProDom; PD000001; Euk\_pkinase; 1. SMART; SM00221; STYKC; 1. 821 AA; 90306 MW; 52.1%; 57.18; Ouery Match
Best Local Similarity 5/...
Local 8. Conservative 141 809 565 578 676 596 596 694 ACT\_SITE MUTAGEN SEQUENCE DOMAIN NP\_BIND BINDING MUTAGEN DOMAIN 

761 AAVGFKCKRLEIPR 774 1 SARGTKCLRKKIPR 14 셤 ð

Bacteria; Proteobacteria; alpha subdivision; Rhizobiaceae group; Rhizobiaceae; Rhizobium. 01-FEB-1995 (Rel. 31, Created)
01-FEB-1995 (Rel. 31, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Phosphoglucomutase (EC 5.4.2.2) (Glucose phosphomutase) (PGM).
FGM OR EXOC OR PSCA. 542 AA MEDLINE-95047522; PubMed-7959036; Agrobacterium tumefaciens. STANDARD; SEQUENCE FROM N.A. NCBI\_TaxID=358; STRAIN-A348 PGMU\_AGRTU RESULT 10

"A chromosomal cluster of genes encoding ADP-glucose synthetase, glycogen synthase and phosphoglucomutase in Agrobacterium CHARACTERIZATION.
MEDLINE-90170885; PubMed-2307661;
MEDLINE-90170885; PubMed-2307661;
Ugalde R.A.;
"Biochemical characterization of avirulent exoc mutants of Jttaro A.D., Ugalde R.A.;
A chromosomal cluster of Gene 150:117-122(1994). 

-! - SIMILARITY: BELONGS TO THE PHOSPHOHEXOSE MUTASES FAMILY.

This SWISS-PROT entry is copyright. It is produced through a collaboration for commercial license agreement (See http://www.isb-sib.ch/announce/ the European Bioinformatics Institute. There are no restrictions on use by non-profit institutions as long as its content is in no modified and this statement is not removed. Usage by and for commer the Swiss Institute of Bioinformatics and the or send an email to license@isb-sib.ch). entities requires a

Wed Jul

```
Hypothetical protein; Transferase; Glycosyltransferase; Complete proteome. SEQUENCE 550 Aa; 64278 MW; DB8B5CCEIBA24CB2 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Local Similarity
                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                         RESUĹT 12
                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation between Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Science 273:1058-1073(1996).
-1- SIMILARITY: BELONGS TO THE QUEUINE TRNA-RIBOSYLTRANSFERASE FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bult C.J., White O., Olson G.J., Zhou L., Fleischmann R.D., Sutton G.G., Blake J.A., FitzGerald L.M., Clayton R.A., Gocayne J.D., Sutton G.G., Blake J.A., FitzGerald L.M., Clayton R.A., Gocayne J.D., Cerlavage A.R., Dougherty B.A., Tomb J.F., Adams M.D., Reich C.I., Overbeek R., Kirkness E.F., Weinstock K.G., Merrick J.M., Glodek A., Scott J.L., Geoghagen N.S.M., Weidman J.F., Fuhrmann J.L., Nguyen D., Otterback T.R., Kelley J.M., Peterson J.D., Sadow P.W., Hanna M.C., Cotton M.D., Roberts K.M., Hurst M.A., Kalne B.P., Borodovsky M., Rienk H.-P., Fraser C.M., Smith H.O., Woese C.R., Venter J.C., Complete genome sequence of the methanogenic archaeon, Methanococcus
                                                                                                                                                                                                                 Gaps
                                                                                                                                    FORMS THE PHOSPHOSERINE INTERMEDIATE
                                                                                                                                                                                                                 ö
                                                                                                                                                                                    Score 37; DB 1; Length 542;
Pred. No. 32;
1; Mismatches 2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                        Archaea; Buryarchaeota; Methanococci; Methanococcales; Methanocaldococcaceae; Methanocaldococcus. NCBL_TaxID=2190;
                                                                                                                                               BY SIMILARITY).
F40AD8ED482E905D CRC64;
                                                                                                                                                                                                                                                                                                                                                                           35, Last sequence update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  IGRFAMS; TIGR00432; arcsn_tRNA_tgt; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
STRAIN-JAL-1 / DSM 2661 / ATCC 43067;
MEDLINE-96337999; PubMed-8688087;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FIGRFAMS; TIGR00449; tgt_general; 1.
TIGRFAMS; TIGR00451; unchar_dom_2; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           interPro; IPR004804; Arcsn_tRNA_tgt.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro; IPR002616; Que_tRNAtransf.
InterPro; IPR004521; Unchar_dom_2.
                            IPR001485; PG/PMM_mutase.
    EMBL; AF033856; AAD03475.1; -. HSSP; P00949; 3PMG.
                                                                                                                                                                                                                                                                                                                                                              (Rel. 35, Created)
(Rel. 35, Last seq
                                         Pfam; PP00408; PGW_PNM; 1.
Pfam; PP02878; PGW_PNM_I; 1.
Pfam; PP02879; PGW_PNM_II; 1.
Pfam; PP02880; PGW_PNM_III; 1.
                                                                                                                                                             542 AA; 57802 MW;
                                                                                           PRINTS; PR00509; PGMPMM.
PROSITE; PS00710; PGM_PMM; 1.
Isomerase; Phosphorylation.
                                                                                                                                                                                    50.7%;
70.0%;
                                                                                                                                                                                                                                                                                                                                                                                                    Hypothetical protein MJ0436.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; U67495; AAB98424.1; -
                                                                                                                                                                                                                                                                                                                                                                                                                               Methanococcus jannaschii.
                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                     STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pfam; PF01472; PUA; 1.
Pfam; PF01702; TGT; 1.
SWART; SM00359; PUA; 1.
                                                                                                                                                                                                                                         4 GTKCLRKKIP 13
                                                                                                                                                                                                                                                                  16 GTSGLRKKVP 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IPR002478;
                                                                                                                                                                                                Local Similarity
hes 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                        (Rel.
                                                                                                                                                                                                                                                                                                                                                              L-NOV-1997 (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       or send an email
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MJ0436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        annaschii.
                                                                                                                                                                                                                                                                                                                                     Y436_METJA
                            nterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         interPro;
                                                                                                                                                             SEQUENCE
                                                                                                                                      ACT_SITE
                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                       Y436_METJA
                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                          RESULT 11
                                                                                                                                                                                                                                                                                                                                                   Q Q
    ö
```

```
use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                              15-JUN-2002 (Rel. 35, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Bifunctional dihydrofolate reductase-thymidylate synthase (DFR-TS)
[Includes: Dihydrofolate reductase (BC 1.5.1.3); Thymidylate synthase (BC 2.1.1.45)].
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DIHYDROFOLATE REDUCTASE FAMILY.
-!- SIMILARITY: IN THE C-TERMINAL SECTION; BELONGS TO THE THYMIDYLATE SYNTHASE FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Trypanosoma brucel brucel.
Eukaryota; Euglenozoa; Kinetoplastida; Trypanosomatidae; Trypanosoma.
                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE-96089823; PubMed-8538681; Gamearro F., Y up L., Zhao J., Edman U., Greene P.J., Santi D.; Gamearro F., Y up L., Zhao J., Edman U., Greene P.J., Santi D.; Gamearro F., Y up L., Zhao J., Edman U., Greene P.J., Santi D.; Greene Isolation and expression and characterization of the enzyme. Wol. Blochem. Parasitol. 72:11-22(1995).

-1- CATALTIC ACTIVITY: 5,10-methylenetetrahydrofolate + dUMP dihydrofolate + dIMP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Multifunctional enzyme; Oxidoreductase; Transferase; NADP;
Methyltransferase; Nucleotide biosynthesis; One-carbon metabolism.
DOMAIN 1 242 DIHYDROFOLATE REDUCTASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -!- CATÂLYTIC ACTIVITY: 5,6,7,8-tetrahydrofolate + NADP(+) = 7,8-dihydrofolate + NADPH.
                                                           ö
Length 550;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -i- PATHWAY: Deoxyribonucleotide biosynthesis.
-i- SUBUNIT: HOWODIMER (BY SIMILARITY).
-i- SIMILARITY: IN THE N-TERMINAL SECTION; BELONGS TO THE
                                                              4; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Y SIMILARITY.
39982FC553BF7601 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            THYMIDYLATE SYNTHASE
   Score 37; DB 1;
Pred. No. 32;
1; Mismatches
                                                                                                                                                                                                                                                                                                                                   527 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRINTS; PRO0070; DHFR.
PRINTS; PRO1018; THYMOSNTHASE.
PRODON; PRO101180; ThYMIGHIAL_SYNt; 1.
PROSITE; PS00075; DHFR; 1.
PROSITE; PS00091; THYMIDYLATE_SYNTHASE; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro; IPR001796; DHFR.
InterPro; IPR000399; Thymidylat_synt.
Pfam; PF00186; D1Hf0late_red; 1.
Pfam; PF00303; thymidylat_synt; 1.
                                                                                                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                                                                                                                           01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequ
15-JUN-2002 (Rel. 41, Last anno
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    58804 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; U20781; AAA91362.1; -.
      50.7%;
61.5%;
                                                                                                                                                                             457 SEKGAKLLWKKIP 469
                                                                                                                      1 SARGTKCLRKKIP 13
                                  Best Local Similarity 61.5
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                      STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    527 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=5702;
                                                                                                                                                                                                                                                                                                       DRTS_TRYBB
Q27783;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACT_SITE
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DOMAIN
                                                                                                                                                                                                                                                                                                          DRTS_TRYBB
```

DB 1; Length 527; 47;

Score 36; Pred. No.

49.3%;

```
1 SARGTKCLRKKIP 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
Matches 8; Conserv
[1]
SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REBASE; 4832
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
  SO THE THE WAY WAS DONE OF THE PROPERTY OF THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation: the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         *Complete sequence analysis of the genome of the bacterium Mycoplasma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Archaea; Euryarchaeota; Thermococci; Thermococcales; Thermococcaceae;
  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Nucleic Acids Res. 24:4420-4449(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16-CCT-2001 (Rel. 40, Created)
16-CCT-2001 (Rel. 40, Last sequence update)
15-UN-2002 (Rel. 41, Last annotation update)
DNA polymerase (EC 2.77.7) (Contains: Endonuclease PI-ThyII
(EC 3.1...) (Thy pol-1 intein); Endonuclease PI-ThyI (EC 3.1...)
                                                                                                                                                                                                                  01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Hypothetical lipoprotein MG338 homolog precursor (P02_orf1300).
MPN489 OR MP353.
Mycoplasma pneumoniae.
Bacteria: Firmicutes; Mollicutes; Mycoplasma.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  27 N-ACYL DIGLYCERIDE (POTENTIAL).
143063 MW; B8236A003A9879DB CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HYPOTHETICAL LIPOPROTEIN MG338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (Potential).
-!- SIMILARITY: BELONGS TO THE MG307 / MG309 / MG338 FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Himmelreich R., Hilbert H., Plagens H., Pirkl E., Li B.-C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 1300;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 36; DB 1; Length 130 Pred. No. 1.1e+02; 3; Mismatches 3; Indels
  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PROSITE; PS00013; PROKAR_LIPOPROTEIN; 1.
Hypothetical protein; Lipoprotein; Membrane; Signal;
Complete proteome.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT; 1668 AA.
                                                                                                                                                                          PRT; 1300 AA.
  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
STRAIN-ATCC 29342 / M129;
MEDLINE-97105885; PubMed-8948633;
  ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (EC 3.1. -. -) (Thy pol-1 intein (Thy pol-2 intein)] (Fragment)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; AE000033; AAB96001.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Thermococcus hydrothermalis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               49.38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    53.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |::||| :|| |
|251 SSQCTKTIRKPKP 1263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 SARGTKCLRKKIP 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
7; Conservative
                                                                                                                                                                                STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             26
1300
                                       5 TKCLRKKIP 13
                                                            |: ||||||
TRILRKKIP 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1300 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local Similarity
les 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=46539;
                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=2104;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Herrmann R.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Thermococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DPOL_ТНЕНҮ
О9НН05;
                                                                                                                                                                              Y338_MYCPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DPOL_THEHY
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      . ନ୍ର
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                       g
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its mose by non-profit institutions as long as lats content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                          Saves I., Eleaume H., Dietrich J., Masson J.-M.;

"The Thy pol-2 intein of Thermococcus hydrothermalis is an isoschizomer of PI-Till and PI-TfuII endonucleases.";

Nucleic Acids Res. 28:4391-4396(2000).

-I. FUNCTION: IN ADDITION TO POLYMERASE ACTIVITY, THIS DNA POLYMERASE EXHIBITS 3' TO 5' EXONUCLEASE ACTIVITY (BY SIMILARITY).

-I. FUNCTION: PI-THYI AND PI-THYII ARE ENDONUCLEASES. PI-THYI CLEAVES.

-I. FUNCTIONS SEQUENCE OF THE THY DNA POL GENE. IT REQUIRES A 21-BP MINIMAL RECOGNITION SEQUENCE.

-I. CATALITIC ACTIVITY: N deoxynucleoside triphosphate = N diphosphate
Querellou J.J.E., Cambon M.A., Lesongeur F.O., Barbler G.;
"Thermococcales taxonomy and phylogeny based on the comparative use of
16S rDNA, 16S-23S rDNA intergenic spacer and family B DNA polymerase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      enzyme;
homing.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -!- PTM: THIS PROTEIN UNDERGOES A PROTEIN SELF SPLICING THAT INVOLVES A POST-TRANSLATIONAL EXCISION OF THE INTERVENING REGION (INTEIN) FOLLOWED BY PEPTIDE LIGATION (Potential).
-!- SIMILARITY: BELONGS TO THE DNA POLYMERASE TYPE-B FAMILY.
-!- SIMILARITY: IN THE INTEIN SECTION; BELONGS TO THE HOWING ENDONUCLEASE FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PROSITE; PSO0116: DNA_POLYMERASE_B; FALSE_NEG.
PROSITE; PS50818; INTEIN_C_TER; 2.
PROSITE; PS50819; INTEIN_ENDONUCLEASE; 2.
PROSITE; PS50817; INTEIN_NTER; 2.
Transferase; DNA_directed DNA_polymerase; DNA_replication;
DNA-binding; Hydrolase; Nuclease; Exonuclease; Multifunctional
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Protein splicing; Autocatalytic cleavage; Endonuclease; Intron NON TER 1 1 458 DNA POLYMERASE, 1ST PART.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ENDONUCLEASE PI-THYI (POTENTIAL).
DNA POLYMERASE, 2ND PART.
ENDONUCLEASE PI-THYII (POTENTIAL).
DNA POLYMERASE, 3RD PART.
W; 5EEBB05EFEDA71C8 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 1668;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 36; DB 1; Length 166
Pred. No. 1.4e+02;
Mismatches 4; Indels
                                                                                                                                          Submitted (OCT-1999) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Interpro; IPR002064; DNA_pol_B.
Interpro; IPR003586; Hedgehog_hintC.
Interpro; IPR0023587; Hedgehog_hintN.
Interpro; IPR004043; Intein.
Interpro; IPR004042; Intein.
Interpro; IPR00404578; Pol2.
Fram; PP00136; DNA_pol_B; I.
Pfam; PP00136; DNA_pol_B; I.
                                                                                                                                                                                                                                                MEDLINE-20512590; PubMed-11058140;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRINTS; PRO0106; DNAPOLB.
PRINTS; PR00379; INTEIN.
SMART; SM0305; HINTC; 2.
SMART; SM03005; HINTN; 2.
SMART; SM00486; POLBC; 1.
TIGREAMS; TIGREO592; Pol2; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; AJ245819; CAC18555.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          996 1044
1045 1433
1434 1668
1668 AA; 193319 M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 49.3%;
61.5%;
                                                                                                                                                                                                                       CHARACTERIZATION OF PI-THYI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                995
1044
1433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       P56689; 1TGO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (DNA) (N)
```

Gaps

셤

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its by non-profit institutions as long as its content is in no way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                     "Accordant, an acrosomal cysteine-rich glycoprotein, is the precursor of the growth-modulating peptides, granulins, and epithelins, and is expressed in somatic as well as male germ cells."; wol. Reprod. Dev. 34:233-243(1993).

-I. FUNCTION: GRANULINS HAYE POSSIBLE CYTOKINE-LIKE ACTIVITY. THEY MAY PLAY A ROLE IN INFLAMMATION, WOUND REPAIR, AND TISSUE REMODELING.
                                                                             01-DEC-1992 (Rel. 24, Created)
01-DEC-1992 (Rel. 24, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Granulins precursor (copyranin) [Contains: Granulin 1; Granulin 2;
Granulin 3; Granulin 4; Granulin 5; Granulin 6; Granulin 7]
                                                                                                                                                                                                                               Cavia porcellus (Guinea pig).
ENkaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostoml;
Mammalla; Eutherla; Rodentla; Hystricognathl; Cavildae; Cavia.
NCBL_TaxID-10141;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GRANULIN 5.
GRANULIN 6.
GRANULIN 7.
N-LINKED (GLCNAC. ...) (POTENTIAL).
EE7C9FC8F21CBBA1 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match

48.6%; Score 35.5; DB 1; Length 591;
Best Local Similarity 35.0%; Pred. No. 65;
Matches 7; Conservative 5; Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                                                                           MEDLINE-93228994; PubMed-8471244;
Baba T., Hoff H.B. III, Nemoto H., Lee H., Orth J., Arai Y.,
                                        591 AA.
                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A., AND SEQUENCE OF 4-21.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1- PTM: GRANULINS ARE DISULFIDE BRIDGED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACROGRANIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      or send an email to license@isb-sib.ch)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GRANULIN 2
GRANULIN 2
GRANULIN 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Signal; Glycoprotein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GRANULIN
                                          PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     fam: PF00396; granulin; 7.
SMART; SM00277; GRAN; 6.
PROSITE; PS00799; GRANULINS; 6.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  rPR000118; Granulin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    62586 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ZMBL; M86735; AAA37030.1;
                                        STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Repeat;
                                                                                                                                                                                                                                                                                                                                                            ISSUE-Testis;
                                                                                                                                                                                        Fragment).
RESULT 15
GRN_CAVPO
ID GRN_CAVPO
                                                                                                                                                                                                                                                                                                                                                                                                                          Jerton G.L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ytokine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CARBOHYD
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NON_TER
SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CHAIN
```

ä

Gaps

Search completed: July 8, 2003, 16:25:03 Job time: 8.82051 secs

ö 윱

GenCore version 5.1.6 Copyright (c) 1993 - 2003 Compugen Ltd.

OM protein - protein search, using sw model

July 8, 2003, 16:17:10; Search time 30.1538 Seconds (without alignments) 95.665 Million cell updates/sec Run on:

US-09-824-647-5 73 1 SARGTKCLRKKIPR 14

Title: Perfect score; Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

671580 segs, 206047115 residues Searched:

. 671580 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

SPTREMBL\_21:\* Database:

sp\_invertebrate:\*
sp\_mammal:\* sp\_vertebrate:\* sp\_unclassified: sp\_rvirus:\* sp\_bacteriap:\* sp\_organelle:\* sp\_archea:\* sp\_bacteria:\* sp\_archeap:\* sp\_rodent:\* sp\_plant:\* sp\_virus:\* sp\_fungi:\* sp\_human:\* sp\_phage: \* sp\_mhc:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Description	Q9d2v3 mus musculu	O9h8s1 homo sapien	Q58811 methanococc	Q8qn63 ectocarpus	Ogdcp5 mus musculu	. 09qxt5 mus musculu	Q9jk23 mus musculu	Q8vuf4 azoarcus ev	Q8zdd9 yersinia pe	Q8sv43 encephalito	Q9dag5 mus musculu	Q9y3k4 homo sapien	Q8wld8 acridocarpu	Q22385 caenorhabdi	Q91zk0 mus musculu	Q9c789 arabidopsis
		į																
		1	3	_	=	.63	52	15	23	4	6	რ	65		8	'n	K0	83
	9	: ∈	Q9D2V3	29H6S	058811	080N	Q9DCP5	090X	<b>09JR</b>	28 VUF	Q8ZD	Q8SV43	Q9DA	<b>39</b> Y3K	28WLD	22238	<b>0912K</b> 0	09C789
	,	ׅׅׅׅׅ֚֓֟֝֟֝֟֝֝֟֝֝֡֟֝֡֟֝	11	4	17	12	11	11	11	2	16	9	11	4	8	S	11	10
	4	<u>.</u>	6	m	2	ū	S	8	6	'n	'n	4	~	2	*	89	2	7
		daten Lengtn DB	58	41	452	70	56	27	28	35	55	12	24	25	25	28	45	77
	Query	ַנְכָיַם :	3.2	79.5	2.5	8.	8.	8.	8.	8.4	8.8	3.4	3.4	3.4	3.4	53.4	3.4	3.4
ф	ð:	E :	60	7	Ñ	Ň	Ñ	'n	Ň	'n	Ŋ	S	١S	'n	S	'n	2	S
		score	89	28	41	40	40	40	40	40	40	. 39	39	39	39	39	39	39
	Result	NO.	1	~	e	4	S	9	7	<b>σ</b> ο	6	10	11	12	13	14	15	16

	Q8w190 eccopoptery Q8w187 ptilochaeta Q8w186 ptilochaeta Q8w1d3 trlaspis hy
•	
P74081 0998390 091870 092665 088851 0888197 0888195 0888195 0888188 0888188 0888184 0888184 0888184 0888184 0888184 0888187 0888187 0888187 0888187 0888187 0888187	Q8WL90 Q8WL87 Q8WL86 Q8WLB6
0 7 7 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
2223 1123 1123 1123 1233 1233 1233 1234 1244 124	248 248 248
***************************************	
2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.	52.1 52.1 52.1
	8888
11. 11. 11. 11. 11. 11. 11. 11. 11. 11.	4444 2643

ALIGNMENTS

```
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 SARGTKCLRKKI 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SAQKNKCLREKI 91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRELIMINARY;
                                                                                                                                                                                                                                                                                                               6 KCLRKKIP 13
                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Viruses; dsDNA vi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STRAIN-ESV-1;
                                                                                                                                                                                            IGR: MJ1416;
                                                                                                                                                                                                                                     Hypothetical
SEQUENCE 4
                                                                                                                                                                                                                                                                                                                                                                                                                                           EsV-1-227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                 Q8QN63;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            09DCP5
09DCP5;
                                                                                                                                                                                                                                                                                                                                                                                      080N63
                                                                                                                                                                                                                                                                                                                                                                   RESULT 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 5
                                                                                                                                                                                                                                                                                                                                                                            280N63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    09DCP5
                                                                                                                                                                                                                                                                                                                                  g
  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GERGER
                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                       TISSUE-OFARIAN CARCINOMA;
ISOGAL T., Ota T., Hayashi K., Sugiyama T., Otsuki T., Suzuki Y.,
Nishikawa T., Nagai K., Sato H., Sugano S., Shiratori A., Sudo H.,
Nishikawa T., Nagai K., Sato H., Sugawara M.,
Takahashi M., Chiba Y., Ishida S., Murakawa K., Ono Y., Takiguchi S.,
Watamanbe S., Kimura K., Murakami K., Ishii S., Rawai Y., Saito K.,
Namamoto J., Wakamatsu A., Nakamura Y., Ishii S., Rawai Y., Saito K.,
Ninomiya K., Iwayanagi T.;
Ninomiya K., Iwayanagi T.;
Submitted (AUG-2000) to the EMBL/Genbank/DDBJ databases.

EMBL; AK023348; BAB14535.1;
                                                                                                                                                                                                                                                                                      Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                   ö
                                                                                              Length 589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 58; DB 4; Length 413;
Pred. No. 0.0042;
3; Mismatches 1; Indels
                                                                                                                   Indels
                                                 PROSITE; PS00799; GRANULINS; 7.
PROSITE; PS00118; PA2_HIS; UNKNOWN_1.
SEQUENCE 589 AA; 63405 MW; 1DE8229C413CA292 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PROSITE; PS00799; GRANULINS; UNKNOWN 4.
PROSITE; PS00118; PA2_HIS; UNKNOWN 1.
SEQUENCE 413 AA; 44132 MW; 0E3767A44BE314EC CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Methanococcus jannaschii.
Archaea; Euryarchaeota; Methanococci; Methanococcales;
Methanococcaceae; Methanococcus.
                                                                                                                                                                                                                                   Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Last sequence update)
Last annotation update)
                                                                                                                   ö
                                                                                            93.2%; Score 68; DB 11; 100.0%; Pred. No. 6.2e-05; tive 0; Mismatches 0;
                                                                                                                                                                                                                413 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                         InterPro; IPR000118; Granulin.
InterPro; IPR001211; PhospholipaseA2.
      InterPro; IPR000118; Granulin.
InterPro; IPR001211; PhospholipaseA2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          058811;
01-JUN-1998 (TrEMBLrel. 06, Created)
01-JUN-1998 (TrEMBLrel. 06, Last seq.
01-MAR-2002 (TrEMBLrel. 20, Last ann
Hypothetical protein MJ1416.
                                                                                                                                                                                                                PRT;
                                                                                                                                                                                                                                 01-MAR-2001 (TrEMBLrel. 16, 01-MAR-2001 (TrEMBLrel. 16, 01-JUN-2002 (TrEMBLrel. 21,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; granulin; 4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                79.58;
                              Pfam; PF00396; granulin; 7.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            71.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   386 AARGIKCLRREAPR 399
                                                                                                                                                562 SARGIKCLRKKIP 574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SARGTKCLRKKIPR 14
                                                                                     Query Match
Best Local Similarity 100.0
                                                                                                                                      1 SARGTKCLRKKIP 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ouery Match
Best Local Similarity 71.46
                                                                                                                                                                                                               PRELIMINARY;
                                                                                                                                                                                                                                             01-MAR-2001 (TrEMBLrel
01-JUN-2002 (TrEMBLrel
OVARC1001154 protein.
Homo sapiens (Human).
                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                           NCBI_TaxID-9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID-2190;
                                          SMART; SM00277;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SM00277
                                                                                                                                                                                                                          09H8S1;
                                                                                                                                                                                                               09H8S1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 058811
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 3
Q58811
                                                                                                                                                                                          RESULT 2
                                                                                                                                                                                                    22222222
222222222
                                                                                                                                      ð
                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
```

```
Delaroque N., Bothe G., Pohl T., Knippers R., Mueller D.G., Boland W., "The complete nucleotide sequence of the Ectocarpus siliculosus virus
                                                                         Kerlavage A.R., Dougherty B.A., Tomb J.-F., Adams M.D., Reigh C.I., Overbeek R., Kirkness B.F., Weinstock K.C., Marrick J.W., Gjodek A., Scott J.L., Geoghagen N.S.M., Weidman J.F., Fuhrmann J.L., Nguyen D., Utterback T.R., Relley J.M., Peterson J.D., Sadow P.W., Hanna M.C., Cotton M.D., Roberts K.M., Hurst M.A., Kaine B.P., Borodovsky M., Klenk H.-P., Fraser C.M., Smith H.O., Woese C.R., Venter J.C.; "Complete genome sequence of the methanogenic archaeon, Methanococcus jannaschii."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                  Science 273:1058-1073(1996).
-!-SIMILARITY: STRONG, TO M.THERMOAUTOTROPHICUM MTH1525, A.FULGIDUS
- AF2363 AND F.SOLFATARICUS ORF C04046.
EMBL, U67582, AAB94246-1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ectocarpus siliculosus virus.
Viruses; dsDNA viruses, no RNA stage; Phycodnaviridae; Phaeovirus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 40; DB 12; Length 205;
Pred. No. 7.9;
2; Mismatches 2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 41; DB 17; Length 452;
Pred. No. 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Submitted (MAR-2001) to the EMBL/GenBank/DDBJ databases.
EMBL; AF204951; AAK14640.1; -.
SEQUENCE 205 AA; 24317 MW; C3A21D3650D46F32 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-JUN-2002 (TrEMBLrel. 21, Created)
01-JUN-2002 (TrEMBLrel. 21, Last sequence update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-JUN-2001 (TIEMBLIEL. 17, Created)
01-JUN-2001 (TIEMBLIEL. 17, Last sequence update)
01-JUN-2002 (TIEMBLIEL. 21, Last annotation update)
Vascular endothelial zinc finger 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    205 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   265 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1; Mismatches
                                                    Bult C.J., White O., Olsen G.J., Zhou L. Sutton G.G., Blake J.A., FitzGerald L.M.
DSM 2661 / ATCC 43067;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      InterPro; IPR000728; AIRS_related
Pfam; PF00586; AIRS; 1.
Pfam; PF02769; AIRS_C; 1.
           MEDLINE-96337999; Pubmed-8688087;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               54.8%;
66.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   56.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity 87.5.
7; Conservative
```

à

```
'ISSUE-LIVER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q9JK23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 09JK23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q8VUF4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         08VUF4

ID 08

AC 08

DT 01

DT 01

DE 6-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          09JK23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                       RA RESERVE TO THE SERVE TO THE 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                         Rawai J., Shinagawa A., Shibata K., Yoshino M., Itoh M., Ishii Y., A Arakawa T., Hara A., Shibata K., Yoshino H., Adachi J., Fukuda S., Arakawa T., Tawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I., A sito T., Okazaki Y., Golobori T., Bono H., Rasukawa T., Saito R., Radota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T., Radota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T., Releischmann W., Gassterland T., Gissi C., King B., Kochiwa H., Rehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J., Schriml L.M., Staubli F., Suzuki R., Tomita M., Wagner L., Washio T., Ra Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G., Rabilli D., Boljunga N., Caninici P., de Bonaldo M.F., Ra Brownstein M.J., Bult C., Fletcher C., Fujita M., Gariboldi M., Gustincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H., Lyono P., Marchionni L., Mashima J., Mazzarelli J., Momberts P., Nordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N., Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F., Whyshaw-Boris A., Yoshida K., Hasegawa Y., Kawaji H., Rohtsuki S., Hayashizaki Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
Presnell S., Gilbert T., Whitmore T., Foster D., Hart C., Lehner J.,
Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  *Functional annotation of a full-length mouse cDNA collection."; Nature 409:685-690(2001).
EMBL; AK002601; BAB22222.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mus musculus homolog of HLA class III region containing NOTCH4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sheppard P., Jelinek L., Whitmore T., Blumberg H., Lehner J., O'Hara P.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 40; DB 11; Length 265;
Pred. No. 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q9QXT5;
01-MAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
NOTCHG-like protein (Vascular endothelial zinc finger 1).
VEZF1 OR ZNEUI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Submitted (OCT-1999) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PROSITE; PS00022; EGF_1; UNKNOWN_1.
PROSITE; PS01186; EGF_2; UNKNOWN_1.
PROSITE; PS01187; EGF_CA; 1.
SEQUENCE 265 AA; 28665 MW; D81EC3DA884FF97E CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            278 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2; Mismatches
                                                                                                                                                                  STRAIN-C57BL/6J; TISSUE-KIDNEY;
MEDLINE-21085660; PubMed-11217851;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MGD; MGI:1313291; Vezfl...
InterPro; IPR000561; EGF-11ke...
InterPro; IPR001881; EGF_Ca...
Pfam; PF00008; EGF; 2...
SMART; SM00181; EGF; 2...
SMART; SM00001; EGF_L1ke; 2...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             54.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            174 SADGTRCLSKEGP 186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 SARGTKCLRKKIP 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  P00740, 1EDM.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID-10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Hayashizaki Y.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q9QXT5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     O90XT
                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RAP REPARE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
```

```
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE-2012921; PubMed-10872820;
MEDLINE-20129221; PubMed-10872820;
Vidal-Tabboada J.M., Lu A., Pique M., Pons G., Gil J., Oliva R.;
Vidal-Tabboada J.M., Lu A., Fique M., Pons G., Gil J., Oliva R.;
Vodan syndrome critical region gene 2: expression during mouse development and in human cell lines indicates a function related to cell proliferation.*;
Dischem. Biophys. Res. Commun. 272:156-163(2000).
Biochem. Biophys. Res. Commun. 272:156-163(2000).
BMBL; AJ238270; CAB87195.1; --
MGD; MGI:1860263; DSCT2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 40; DB 11; Length 278;
Pred. No. 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 40; DB 11; Length 289;
Pred. No. 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4; Indels
                                                                                                                                   Submitted (MAR-2002) to the EMBL/GenBank/DDBJ databases. EMBL; AF184973; AAF01322.1; --
EMBL; BC024610; AAH24610.1; --
HSSP; P00740; 1EDM.
                                                                                                                                                                                                                                                                                                                                  Fram; Evouco, SWART; SMORIS; EGF_11ke; 1.
SWART; SMOROO1; EGF_11ke; 1.
PROSITE; PSO1022; EGF_1; UNKNOWN_1.
PROSITE; PSO1186; EGF_2; UNKNOWN_1.
PROSITE; PSO1187; EGF_04; 1.
Calcium-binding; EGF-11ke domain; Glycoprotein; Repeat.
SEOUENCE 278 AA; 30125 MW; 863159F567102FA7 CRC64;
Martinez T., Hoffman R., O'Hara P.;
Submitted (SEP-1999) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-WAR-2002 (TrEMBLrel. 20, Last sequence update) 01-JUN-2002 (TrEMBLrel. 21, Last annotation update) 6-hydroxycyclohex-1-ene-1-carboxyl-CoA dehydrogenase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            289 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pred. No. 10;
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pred. No. 11;
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Created)
                                                                                                                                                                                                                                             MGD; MGI:1313291; Vezfl.
InterPro; IPR0010561; EGF-11ke.
InterPro; IPR001881; EGF_Ca.
Pfam; PF00008; EGF; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   54.8%; 61.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-0CT-2000 (TrEMBLrel. 15, 01-0CT-2000 (TrEMBLrel. 15, 01-DEC-2001 (TrEMBLrel. 19,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q8VUF4;
01-MAR-2002 (TrEMBLrel. 20,
01-MAR-2002 (TrEMBLrel. 20,
01-JUN-2002 (TrEMBLrel. 21,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 174 SADGTRCLSKEGP 186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity 61.59
-1.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity 61.53
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 SARGTKCLRKKIP 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 SARGTKCLRKKIP 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Leucine rich protein.
DSCR2 OR MC21-LRP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mus musculus (Mouse)
                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=10090;
                                                                                                                              Strausberg R.
```

124 AA.

```
Rawal J., Shinagawa A., Shibata K., Yoshino M., Itoh M., Ishil Y.,
A Arakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S.,
A Arawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S.,
A Arawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,
Saito T., Okazaki Y., Gojobori T., Bono H., Rasukawa T., Saito R.,
A Relschmann W., Gaasterland T., Gissi C., King B., Kochiwa H.,
A Ruchl P., Lewis S., Matsuo T., Nikaido I., Pescole G., Quackebbush J.,
Schriml L.M., Staubli F., Suzuki R., Tomita M., Wagner L., Washio T.,
A Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
Blake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F.,
A Brownstein M.J., Bult C., Pletcher C., Fujita M., Gariboldi M.,
A Gustincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H.,
Iyons P., Marchionni L., Mashima J., Mazzarelli J., Mombaerts P.,
Nordone P., Ring B., Kingwald M., Rodriguez I., Sakamoto N.,
Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Suzuki H., Toyo-oka K., Wang K.H., Weitz C., Whittaker C., Wilming
Mynshaw-Boris A., Yoshida K., Hasegawa Y., Kawaji H., Kohtsuki S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Euthazoa; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE-21576510; PubMed-11719806;
MEDLINE-21576510; Duprat S., Cornlllot E., Metenier G., Thomarat F.,
Prensier G., Barbe V., Peyretaillade E.; Brottier P., Wincker P.
Delbac F., El Alaoul H., Peyret P., Saurin W., Gouy M.,
Weissenbach J., Vivares C.P.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "Genome sequence and gene compaction of the eukaryote parasite Encephalitozoon cuniculi.";
                                                                                                                                                                Eukaryota; 'Microsporidia; Unikaryonidae; Encephalitozoon.
NCBL_TaxID=6035;
                                                                                                                                                                                                                                                                                Genoscope; Submitted (APR-2001) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nature 414:450-453(2001).
EMBL, ALS90447: CAD2556.1; -.
Hypothetical protein.
SEQUENCE 124 AA; 13235 MW; CBE8854640A8D841 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Last sequence update)
Last annotation update)
                                                                                    Last annotation update)
                                                              Last sequence update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 53.4%; Score 39; DB 5; 70.0%; Pred. No. 7.9; tive 2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Created)
                                              Created)
PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE-21085660; PubMed-11217851;
                                        01-JUN-2002 (TEMBLEEL. 21, Crea 01-JUN-2002 (TEMBLEEL. 21, Last 01-JUN-2002 (TEMBLEEL. 21, Last Hypothetical protein ECU07_0240. ECU07_0240.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRAIN-C57BL/6J; TISSUE-TESTIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -JUN-2001 (TrEMBLrel. 17,
-JUN-2001 (TrEMBLrel. 17,
-JUN-2001 (TrEMBLrel. 17,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ouery Match
Best Local Similarity 70.0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRELIMINARY;
    PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    L-JUN-2001 (TrEMBLrel.
L-JUN-2001 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5 TKCLRKKIPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3 TKCLREKIEK 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1700011E24Rik protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mus musculus (Mouse)
                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1700011E24RIK
                                                                                                                                                                                                                                                              STRAIN-GB-M1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q9DAG5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        09DAG5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 11
    g,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Simmonds M., Skelton J., Stevens K., Wuall M., Kullellolu N.,
Simmonds M., Skelton J., Stevens K., Whitehead S., Barrell B.G.;
"Genome sequence of Yersinia pestis, the causative agent of plague."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE-21470413; Pubmed-11586360;
Parkhill J., Wren B.W., Thomson N.R., Titball R.W., Holden M.T.G.,
Prentice M.B., Sebaihia M., James K.D., Churcher C., Mungall K.L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Prentice M.B., Sebaihia M., James K.D., Churcher C., Mungall K.L., Baker S., Basham D., Bentley S.D., Brooks K., Cerdeno-Tarraga A.M. Chillingworth T., Cronin A., Davies R.M., Davis P., Dougan G., Feltwell T., Hamiin N., Holroyd S., Jagels K., Karlyshev A.V., Leather S., Moule S., Oyston P.C.F., Quail M., Rutherford K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bacteria; Proteobacteria; gamma subdivision; Enterobacteriaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                              Bacteria; Proteobacteria; beta subdivision; Rhodocyclus group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 40; DB 16; Length 555;
Pred. No. 20;
0; Mismatches 3; Indels
                                                                                                                                                                                                                                                                                                                                                                 Score 40; DB 2; Length 355;
Pred. No. 13;
                                                                                                                                                                                                                                                                                                                                                                                                                3; Indels
                                                                                                                                                                                         Submitted (JAN-2002) to the EMBL/GenBank/DDBJ databases. EMBL; A428529; CAD21637.1; -. InterPro; IPR002085; Adh_zn_family. InterPro; IPR001085; CytC_heme_bind. Pfam; PF00107; adh_zinc; 1. PROSTIE: PS00109; CYTOCHROME_C; UNKNOWN_1. SEQUENCE 355 AA; 38211 WW; 5E1D930131F800A6 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TIGREAMS; TIGROU440; ginS; 1.
PROSITE; PSOU178; AA_TRNA_LIGASE_I; 1.
Aminoacyl-tRNA synthetase; Ligase; Complete proteome.
SEQUENCE 555 AA; 63750 MW; AD3C68D6FB56C0B5 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-JUN-2002 (TrEMBLrel. 20, Last sequence update) Glutaminyl-tRNA synthetase (EC 6.1.1.18).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           555 AA
                                                                                                                                                                                                                                                                                                                                                                                                                4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       InterPro; IPR004514; GlnS.
InterPro; IPR000924; Glu_tRNA-synt_lc.
InterPro; IPR001412; tRNA-synt_l.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Created)
                                                                                                                                                                            Mohr K., Herrmann H., Burchhardt G.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        / BIOVAR ORIENTALIS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; AJ414153; CAC92873.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pfam; PF00749; tRNA-synt_lc;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            54.88;
72.78;
                                                                                                                                                                                                                                                                                                                                                                     54.8%;
                                                                                                                                                                                                                                                                                                                                                                                            46.28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-MAR-2002 (TIEMBLES 20, 01-MAR-2002 (TIEMBLES 20, 01-JUN-2002 (TIEMBLES 21,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                : || :|| :|:|
TGRGNRCLSQKMP 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 SARGTKCLRKKIP 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 54.8
Best Local Similarity 72.7
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                             6; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2 ARGTKCLRKKI 12
                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
                                                                                                                             SEQUENCE FROM N.A.
                                                                                    NCBI_TaxID=59406;
                          Azoarcus evansii
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Yersinia pestis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID-632;
                                                                                                                                                     STRAIN-KB740;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRAIN-CO-92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-MAR-2002
01-MAR-2002
```

ersinia.

RESULT 10

a

ò

Q8ZDD9

RESULT 9 6ggz80

셤

ò

Matches

Gaps

ö

247 AA

Length 124;

```
1 1
254 254
254 AA; 29522 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                       Best Local Similarity
Matches 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A. MCMurray A.A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRAIN-C57BL/6J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    rllA5.5 protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=6239;
NON_TER
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0912KO;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               T11A5.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q912K0
                                                                                                                                                                                                                                                                                                                                                                                                                                       022385
                                                                                                                                                                                                                                                                                                                                                                        RESULT 14
Q22385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT, 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q912K0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DE REPORTED DE LA PROPERTICIO DELLA PROPERTICIO 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
   FT
                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Davis C.C., Anderson W.R., Donoghue M.J.; "Phylogeny of Malpighlaceae: evidence from chloroplast ndhF and trnL-F nucleotide sequences.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I; Malpighiales; Malpighiaceae; Acridocarpus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens (Human).
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
                                    "Functional annotation of a full-length mouse cDNA collection.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                         Length 247;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 39; DB 4; Length 252;
Pred. No. 15;
3; Mismatches 4; Indels
                                                                                                                                                                                                                                                                  3; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Peck A.;
Submitted (MAR-1999) to the EMBL/GenBank/DDBJ databases.
EMBL; AL031224; CAB41306.1; -.
InterPro; IPR004979; TF_AP2.
Pfam; PF03299; TF_AP-2; 1.
                                                   NATURE 409:685-690(2001).
EMBL; AK005861; BAB24281.1; -
MGD; MGI:1922717; 1700011E24Rik.
SECUENCE 247 AA; 27631 MW; 5A9BBD78EE7BD9FA CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE 252 AA; 27527 MW; 461BB71DC17C5980 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-NOV-1999 (TrEMBLrel. 12, Last sequence update) 01-JUN-2002 (TrEMBLrel. 21, Last annotation update) DJ336H9.2 (Novel AP-2 like protein) (Fragment).
                                                                                                                                                                                                      DB 11;
15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               254 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              252 AA
                                                                                                                                                                                                      53.4%; Score 39; DB 60.0%; Pred. No. 15; tive 1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NADH dehydrogenase subunit F (Fragment)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Am. J. Bot. 88:1830-1846(2001).
EMBL; AF351016; AAL35030.1; -.
InterPro; IPR002128; Oxidored_q1_C.
Pfam; PF01010; oxidored_q1_C; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          53.4%;
50.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-MAR-2002 (TrEMBLES 20, 01-MAR-2002 (TrEMBLES 20, 01-JUN-2002 (TrEMBLES 21,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-NOV-1999 (TrEMBLrel. 12, 01-NOV-1999 (TrEMBLrel. 12, 01-JUN-2002 (TrEMBLrel. 21,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | | :|||:|: |
SKNGGRCLREKLDR 71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 SARGTKCLRKKIPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ouery Match
Best Local Similarity 50.0.
The Conservative
                                                                                                                                                                                                         Query Match. 53.4
Best Local Similarity 60.0
Matches 6; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Acridocarpus natalitius.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                 194 TSCFRSKVPR 203
                                                                                                                                                                                                                                                                                                                           5 TKCLRKKIPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=9606;
      Hayashizaki Y.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Chloroplast
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ълз36н9.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q9Y3K4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q8WLD8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 13
08WLD8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q9Y3K4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
         $ 54 54 58 58
$ 58 54 54 55
$ 58 54 54 55
$ 58 54 54 55
$ 58 54 54 55
$ 58 54 54 55
$ 58 54 54 54 54
$ 58 54 54 54
$ 58 54 54 54
$ 58 54 54
$ 58 54 54
$ 58 54 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58 54
$ 58
                                                                                                                                                                                                                                                                                                                           ð
                                                                                                                                                                                                                                                                                                                                                                              셤
```

```
Gaps
                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida; Rhabditoidea;
Rhabditidae; Peloderinae; Caenorhabditis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Zhao F., Satoda M., Licht J.D., Hayashizaki Y., Gelb B.D.; "Cloning and characterization of a novel mouse AP-2 transcription factor, AP-2delta, with unique DNA binding and transactivation properties.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "Genome sequence of the nematode C.elegans: A platform for investigating biology."; Science 282:2012-2018(1998).
                                            Length 254;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 39; DB 5; Length 288;
Pred. No. 17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    McMurray A.A.;
Submitted (MAY-1996) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; Z72515; CAA96685.1; -.
INLECPRO; IPR000896; Hemocyanin.
PROSITE; PS0010; HEMOCYANIN_2; UNKNOWN_1.
SEQUENCE 288 AA; 32287 WW; EBIEEA0EF945F9BD CRC64;
EESD5E653867D926 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                    Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                288 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        452 AA.
                                          Score 39; DB
Pred. No. 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1; Mismatches
                                                                                       3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Created)
                                                                                                                                                                                                                                                                                                                                            Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
MEDLINE-99069613; PubMed-9851916;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Transcription factor AP-2delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     53.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             J. Biol. Chem. 0:0-0(2001).
EMBL; AF421891; AAL16940.1;
InterPro; IPR004979; TF_AP2.
                                            53.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-DEC-2001 (TrEMBLrel. 19, 01-DEC-2001 (TrEMBLrel. 19,
                                                                                                                                                                                                                                                                                                                                          01-NOV-1996 (TrEMBLrel. 01,
01-NOV-1996 (TrEMBLrel. 01,
01-DEC-2001 (TrEMBLrel. 19,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best_Local Similarity 70.0
Matches 7; Conservative
                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRELIMINARY;
                                                                                                                                                                                                                                                                                                  PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Caenorhabditis elegans.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-JUN-2002 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         145 GSKCLLKKAP 154
                                                                                                                                      3 RGTKCLRKKIP 13
                                                                                                                                                                : | : | | : | | | 48 QGSKILKKKIP 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4 GTKCLRKKIP 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mus musculus (Mouse)
```

Pfam; PP03299; TF\_AP-2; 1. SEQUENCE 452 AA; 49547 MW; 6722342B15CDF9EB CRC64; DR SQ

Gaps Score 39; DB 11; Length 452; Pred. No. 26; 3; Mismatches 4; Indels

Query Match
Best Local Similarity 50.0%;
Matches 7; Conservative

1 SARGTKCLRKKIPR 14 | | :|||:|:| 258 SKNGGRCLREKLDR 271

셤 ŏ

Search completed: July 8, 2003, 16:28:00 Job time: 32.1538 secs

```
GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
```

 protein search, using sw model OM protein July 8, 2003, 16:08:55; Search time 47.5 Seconds (without alignments) 53.300 Million cell updates/sec Run on:

US-09-824-647-6. Title:

98 1 EKAPAHLSLPDPQALKRDV 19 Perfect score: Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

908470 seqs, 133250620 residues Searched:

908470 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Database:

/SIDS2/gcgdata/geneseq/geneseqp-embl/AA2002.DAT: /SIDS2/gcgdata/geneseq/geneseqp-emb1/AA2000.DAT /SIDS2/gcgdata/geneseq/geneseqp-embl/AA2001.DAT /SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1986.DAT: /geneseqp-embl/AA1993 /qcqdata/geneseq/geneseqp-embl/AA1997 /gcgdata/geneseq/geneseqp-embl/AA1980. /gcgdata/geneseg/geneseqp-emb1/AA1988 /gcgdata/geneseq/genesedp-emb1/AA19 genesegn /SIDS2/gcgdata/geneseg/ A\_Geneseq\_101002:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

#### SUMMARIES

	Description	Human GP88 autocri	Human protein segu	Human epithelin pr	Granulin sequence.	Human GP88 autocri	Human granulin/epi	Human cancer assoc	Rat epithelin prec	Bovine epithelin p	Mouse GP88 autocri
	,										
	£ £	AAW85480	AAB94550	AAR14326	AAR48673	AAW85475	AAE20521	AAB43971	AAR14325	AAR15426	AAW85474
		20	22	12	14.	20	23	21	12	12	20
	Query Match Length DB	19	413	593	593	593	593	621	589	179	589
æ	Query Match	100.0	100.0	100.0	100.0	100.0	100.0	100.0	64.3	54.1	51.0
	Score	98	86	96	96	96	96	98	63	53	20
	Result No.		7	33	4	2	9	7	æ	6	10

Composition containing antagonist of growth factor GP88 - useful for treating cancer and viral diseases and also for diagnosing disease

WPI; 1999-045276/04.

Serrero G;

-	Novel human diagno	Human protein sequ	polypept		Human protein SEQ		Human protein SEQ	Propionibacterium	Peptide #1499 enco	Peptide #1537 enco	Protein #1474 enco	Human brain expres			Peptide #1524 enco	Peptide #1458 enco	Human peptide enco	Mouse GP88 autocri	<ul> <li>A. thaliana MYB26</li> </ul>	Mouse epithelin pr	Pseudomonas aerugi	Human immune∕haema		Human secreted pro	nervor		0	nectin	Novel human diagno	Human ovarian anti	human	human d	Human ORF706 prote	Human haematologic	•
																 				٠.												,.			
AAE20520	ABG28448	AAB94335	AAM39674	AAB92977	AAM80279	AAM41460	AAM79295	AAU56854	ABB28848	ABB34031	ABB19475	AAM54803	AAM67188	AAM15045	AAM27487	AAM02776	ABG36851	AAW85478	AAM49744	AAR14327	AAU33715	AAM82920	AAU51132	AAG02780	ABB16381	ABG04056	AAY32389	AAE23296	ABG18843	ABP41837	ABG28883	ABG08403	ABP31733	AAM81919	
23	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	23	20	23	12	22	22	22	21	22	22	21	23	52	23	22	22	23	22	
589	730	324	828	828	829	829	996.	55	. 59	59	59	59	59	29	. 59	29	29	19	367	589	619	57	79	114	117	245	479.	479	487	522	812	820	110	99	
51.0	50.0	48.0	48.0	48.0	48.0	48.0	48.0	45.9	45.9	S	45.9		745.9	45.9	45.9		45.9	44.9	44.9	44.9	44.4	43.9	43.9	43.9	43.9	•	43.9	43.9	43.9	43.9		43.9	43.4		
20	49	47	47	47	47	47.	47	45	45	45	45	45	45	45	45	45	45	44	44	44	43.5	43	43	43	43	43	43	43	43	43	43	. 43	42.5	42	
11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	. 45	

## ALIGNMENTS

```
GP88; granulin; epithilin; human; growth factor; autocrine; tumour; cancer; viral infection; antagonist; therapy; diagnosis; antigen;
                                                                     Human GP88 autocrine growth factor antigenic peptide E19V.
                 AAW85480 standard; Peptide; 19 AA.
                                                                                                                                                                                98WO-US10555.
                                                                                                                                                                                                 97US-0991862
97US-0863079
                                                    15-MAR-1999 (first entry)
                                                                                                                                                                                                                             (SERR/) SERRERO G.
                                                                                                                           Homo sapiens.
                                                                                                                                            W09852607-A1.
                                                                                                                                                                                22-MAY-1998;
                                                                                                                                                                                                 16-DEC-1997;
23-MAY-1997;
                                                                                                                                                              26-NOV-1998.
                                                                                                         antibody.
                                   AAW85480;
RESULT 1
```

```
oligonuclectide comprises at least 15 nuclectides; or (b) a combination of an oligonuclectide comprising a sequence complementary to the comprising a sequence complementary to the sequence and an oligonuclectide which comprises a 5'-end sequence and an oligonuclectide comprising a sequence complementary to a polynuclectide comprises a 1'-end sequence, where the complementary to a polynuclectide comprises at least 15 nuclectides and the combination of the 5'-end sequence/3'-end sequence is selected from those defined in the specification. The primers are useful for synthesistaling polynuclectides, in gene thatapy. The primers are useful for synthesistaling polynuclectides, particularly full-length cDNAs. The primers are also useful for the detection add/or diagnosis of the primers are also useful for the detection add/or diagnosis of the primers allow obtaining of the full-length cDNAs. The primers allow obtaining of the full-length cDNAs as asily without any specialised methods. AAH03166 to AAH1363 and AAH13633 represent human amino acid sequences; and AAH13629 to AAH13632 represent lingonuclectides, all of which are used in the exemplification of the present invention.
                                                                                                                                                                                                                                                                                                                                                                                100.0%; Score 98; -. DB 22;
100.0%; Pred. No. 3.7e-06;
tive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ET; growth regulation; inhibition; stimulation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "claim 2, page 53"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "claim 3, page 53"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "claim 4, page 53"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualiflers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1..593
| /label= precursor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAR14326 standard; Protein; 593 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /label = EP
/note = "claim 5,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 EKAPAHLSLPDPQALKRDV 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /label- EP
/note- "claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /label= EP
/note= "claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /label- EP
/note- "claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /label- EP-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /label= EP-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human epithelin precursor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .418
                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       . 262
                                                                                                                                                                                                                                                                                                            the present invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 497
                                                                                                                                                                                                                                                                                                                                                                                                 Local Similarity
les 19; Conserv
                                                                                                                                                                                                                                                                                                                                               413 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      17-JAN-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO9115510-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17-0CT-1991.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAR14326;
                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pept1de
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 eptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Peptide
                                                                                                                                                                                                                                                                                                                                                                                                           Best Loc
Matches
         88666666666666666668888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           . අ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The present invention describes primer sets for synthesising 5602 full-length cDNAs defined in the specification. Where a primer set comprises: (a) an oligorar primer and an oligonucleotide complementary to the complementary strand of a polynucleotide which comprises one of the 5602 nucleotide sequences defined in the specification, where the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Primer sets for synthesizing polynucleotides, particularly the 5602 full-length CDNAs defined in the specification, and for the detection and/or diagnosis of the abnormality of the proteins encoded by the full-length CDNAs.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human; primer; detection; diagnosis; antisense therapy; gene therapy.
                                                                                 comprising amino 75). GP88 is an 88
                                                                           This is the amino acid sequence of peptide E19V, comprising amino acid residues E340-7364 of human GPB8 (see AAM85475). GP88 is an EAD8 glycoprotein autocrine growth factor that is expressed in a tightly regulated manner in normal cells, is overexpressed and unregulated in highly tumorigenic cells derived from normal cells, and which acts as a stringently required growth stimulator for the tumorigenic cells. E19V was used to raise neutralising antibodies to GP88. Antagonists to GP88, such as anti-GP88 antibodies, are used to treat diseases associated with increased expression of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Yamamoto J;
                                                                                                                                                                                                                                                 GP88, particularly cancer but also viral infections. Anti-GP88 antibodies can also be used as diagnostic reagents and to deliver toxins or other compounds to GP88-expressing cells.
                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                100.0%; Score 98; DB 20; Length 19; 100.0%; Pred. No. 1.3e-07;
                                                                                                                                                                                                                                                                                                                                                                                                       0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Saito K,
Otsuki
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 8; SEQ ID 15310; 2537pp + CD ROM; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Isogai T, Nishikawa T, Hayashi K, Si
Sugiyama T, Wakamatsu A, Nagai K,
                                                                                                                                                                                                                                                                                                                                                                                                     0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human protein sequence SEQ ID NO:15310.
                                            Example 8; Page 45; 86pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAB94550 standard; Protein; 413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 EKAPAHLSLPDPQALKRDV 19
                                                                                                                                                                                                                                                                                                                                                                                                                                            1 EKAPAHLSLPDPQALKRDV 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    27-AUG-1999; 99JP-0300253.
11-JAN-2000; 2000JP-0118776.
02-MAY-2000; 2000JP-0133767.
09-JUN-2000; 2000JP-0241899.
       from altered GP88 expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99JP-0248036.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           28-JUL-2000; 2000EP-0116126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                    Best Local Similarity 100.
Matches 19; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (HELI-) HELIX RES INST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2001-318749/34.
                                                                                                                                                                                                                                                                                                                             19 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EP1074617-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                29-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     26-JUN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        07-FEB-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ota T, Is
Ishii S,
                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAB94550;
                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               염
                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
```

53

8, page 55"

page 53

ö

ő

Length 413; Indels

Gaps

ö

Indels

M.

Shoyab M,

```
Composition containing antagonist of growth factor GPB8 - useful for treating cancer and viral diseases and also for diagnosing disease from altered GPB8 expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This is the amino acid sequence of human GP88, an 88 kDa glycoprotein autocrine growth factor and epithilin/granulin precursor that is expressed in a tightly regulated manner in normal cells, is overexpressed and unregulated in highly tumorigenic cells derived from normal cells, and which acts as a stringently required growth stimulator for the tumorigenic cells. Inhibition of GP88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GP88; granulin; epithilin; human; growth factor; autocrine; tumour; cancer; viral infection; antagonist; therapy; diagnosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       expression or action in the tumorigenic cells results in an inhibition of the tumorigenic properties of the overproducing cells. Antagonists to GPBB are used to treat diseases associated with increased expression of GPBB, particularly cancer but also viral infections. Fragments of GPBB are used to raise specific
                                                                                        The granulin inhibits keratinocytes and is useful in formulations for promoting the healing of wounds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
340..364
//oce= "E19V peptide used to raise antibody"
//oce= "A14R peptide used to raise antibody"
New cystine rich granulin peptide(s) from leucocyte(s) - are keratinocyte inhibitors useful topically for wound healing
                                                                                                                                                                                     Length 593;
                                                                                                                                                                                   Score 98; DB 14;
Pred. No. 5.5e-06;
                                                                                                                                                                                                                       Mismatches
                                                       Disclosure; Figure 4c; 53pp; English
                                                                                                                                                                                                                                                                                                                                                                                         AAW85475 standard; Protein; 593 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human GP88 autocrine growth factor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Example 5; Fig 9A; 86pp; English.
                                                                                                                                                                                                                                                                               346 EKAPAHLSLPDPQALKRDV 364
                                                                                                                                                                                                                                                            1 EKAPAHLSLPDPQALKRDV 19
                                                                                                                                                                                                                         ö
                                                                                                                                                                                   100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        98WO-US10555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          970S-0991862
970S-0863079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    15-MAR-1999 (first entry)
                                                                                                                                                                             Query Match 100.0
Best Local Similarity 100.0
Matches 19; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 1999-045276/04.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (SERR/) SERRERO G.
                                                                                                                                                    593 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               N-PSDB; AAV82825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            16-DEC-1997;
23-MAY-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO9852607-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          22-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo saptens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     26-NOV-1998.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Serrero G;
                                                                                                                                                                                                                                                                                                                                                                                                                                  AAW85475;
                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pept1de
                                                                                                                                                                                                                                                                                                                                                         RESULT 5
AAW85475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                   ET-1 is a bifunctional growth regulator, capable of stimulating the growth of some cell types while inhibiting the growth of others. ET-2 is functionally similar to ET-1 w.r.t. growth inhibitory bloactivity. In contrast, however, ET-2 is apparently not capable of eallotting the growth stimulatory activity characteristic of ET-1 and, in fact, antagonises this ET-1 activity. See also AAQ14338-40, AAQ1452-53, AAR14328-9 and AAR15315-20.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                         New cysteine-rich growth modulating proteins, epithelins - useful as inhibitors of neoplastic cell growth and to promote wound healing and treat psoriasis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 593;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Granulin; keratinocytes; wound healing; inhibition; peptide;
granulocytes; leucocytes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 98; DB 12;
Pred. No. 5.5e-06;
; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               'note= "Valine encoded by ATG."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "Glycine encoded by CAG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAR48673 standard; Protein; 593 AA
                                                                                                                                                                                                                                                                                                   Disclosure; Fig 22; 97pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       346 EKAPAHLSLPDPQALKRDV 364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 EKAPAHLSLPDPQALKRDV 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100.0%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               92WO-CA00089
                                      910S-0083796.
 91WO-US02321
                                                                                            (BRIM ) BRISTOL-MYERS SQUIB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity 100.
nes 19; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note=
                                                                                                                                 Plowman GD;
                                                                                                                                                                   WPI; 1991-325168/44.
N-PSDB; AAQ14339.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 1993-320328/40.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Misc-difference 452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (SOLO/) SOLOMON S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        593 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Granulin sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     N-PSDB; AAQ49052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens:
                                      13-MAR-1991;
03-APR-1990;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               28-FEB-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    03-FEB-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        22-APR-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        W09315195-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             05-AUG-1993
```

AAR48673;

Sequence

Query Match

Best Loc Matches

셤 ð

Solomon S;

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The invention relates to a method for diagnosing tumourigenicity in a human. The method comprises obtaining a biological sample containing cells from the patient, detecting 688 in the cells of the sample, and determining the number of GP88 positive cells in the sample, and determining the ratio of GP88 positive cells to the total number of cells in the sample. The invention also relates to a method for determining if a human patient is resistant to the antineoplastic effects of anticestrogen therapy. The method is useful for diagnosing tumourigenicity in a sample, such as blood, serum, plasma, urine, nipple aspirate, cerebrospinal fluid, liver, kidney, breast, bone, brain, lung, colon, or skin cancer. The method can be used to treat or prevent re-occurrence of cancer in a patient, by administering tamoxifen if the
                                                                                                                                                                                                                                                                                                                                                                                                                                   granulin precursor; GP88; cytostatic; tumoùrigenicity; tamoxifen; pplastic; antioestrogen therapy; skin cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Diagnosing tumorigenicity in a human, comprising obtaining a cell sample, detecting GP88 in the cells, and determining the number of GP88 positive cells in the sample -
                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note= "Region used as antigen to develop anti-human GP88 neutralising antibody"
antibodies (used as antagonists, as diagnostic reagents and for delivering toxins or other compounds to GPBB-expressing cells) and to screen for antibodies. Methods are provided for diagnosing disease, or determining susceptibility to disease, resulting from altered GPBB activity.
                                                                                                                                                             ö
                                                                                                                              Length 593;
                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                      Human granulin/epithelin precursor (GP88) protein.
                                                                                                                                                             ö
                                                                                                                              100.0%; Score 98; DB 20; 100.0%; Pred. No. 5.5e-06;
                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              'note- "Encoded by AAG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                     AAE20521 standard; Protein; 593 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Disclosure; Fig 9B; 50pp; English.
                                                                                                                                                                                                          FKAPAHLSLPDPQALKRDV 364
                                                                                                                                                             ö
                                                                                                                                                                                           1 EKAPAHLSLPDPQALKRDV 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         97US-0863079.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           15-JUN-2001; 2001US-0880842
                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                346..364
                                                                                                             Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2002-267529/31.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (SERR/) SERRERO G.
                                                                                              593 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       N-PSDB; AAD32850.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US2002025543-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                  antineoplastic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         23-MAY-1997;
08-DEC-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                      01-JUL-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           28-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Serrero G;
                                                                                              Sequence
                                                                                                                                                                                                                         346
                                                                                                                                                                                                                                                                                                                                       AAE20521;
                                                                                                                                                                                                                                                                                                                                                                                                                                     Human;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Region
                                                                                                                                                                                                                                                                                      AAE20521
ID AAE
                                                                                                                                                                                                                                                                         RESULT
                                                                                                                                                                                                                                                                                                                                                                                     88888888
                                                                                                                                                                                                                      g
                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                                                                                       SX E
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       dermatological; neuroprotective; cardiant; thrombolytic; coagulant; dermatological; neuroprotective; cardiant; thrombolytic; coagulant; dermatological; neuroprotective; cardiant; thrombolytic; coagulant; nootropic; vasotropic; antipsoriatic and antianglogenic. The polynucleotides and polypeptides can be used for preventing, treating or ameliorating medical conditions and diagnosing pathological conditions. Polynucleotides, polypeptides, antibodies, agonists and antagonists from the present invention may be used to treat immune disorders by activating or inhibiting the proliferation, differentiation or mobilisation of immune cells, to treat disorders of hematopoletic cells, autolumune disorders, allergic reactions, graft versus host disease and organ
sample contains less than 10 % GP08, or less than 5 % GP08 positive cells. The present sequence is human granulin/epithelin precursor (GP08)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          in AAB43398 to AAB44239. The proteins can have activities based on the tissues and cells the genes are expressed in. Example of activities include: cytostatic; proliferative; vulnerary; immunomodulator; antidiabetic; antiasthmatic; antirheumatic; antiarthritic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAC77607 to AAC78448 encode the human cancer associated proteins given in AAB43398 to AAB44239. The proteins can have activities based on the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                dermatological; neuroprotective; thrombolytic; coagulant; nootropic; vasotropic; antipsorlatic; antiangiogenic; gene therapy; inflammation; immune disorder; haematopoletic cell disorder; autoimmune disorder; allergic reaction; graft versus host disease; organ rejection; haemostatic; thrombolytic; cardiovascular disorder; infection; neurological disease; drug screening.
                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            diagnosis; cytostatic; proliferative; vulnerary; immunomodulator; antidiabetic; antiasthmatic; antirheumatic; antiarthritic; antiviral; antinflammatory; antithyroid; antiallergic; antibacterial; cardiant;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Novel isolated nucleic acids comprising sequences encoding peptides useful for treating or diagnosing e.g. cancer -
                                                                                       Length 593;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human; cancer associated gene; cancer antigen; detection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human cancer associated protein sequence SEQ ID NO:1416.
                                                                                                                        100.0%; Score 98; DB 23; 100.0%; Pred. No. 5.5e-06;
                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 11; Page 2094-2096; 2352pp; English.
                                                                                                                                                                                                                                                                                                                                               AAB43971 standard; Protein; 621 AA.
                                                                                                                                                                                                                            EKAPAHLSLPDPQALKRDV 364
                                                                                                                                                                                                      1 EKAPAHLSLPDPQALKRDV 19
                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (HUMA-) HUMAN GENOME SCI INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     08-MAR-2000; 2000WO-US05882.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99US-0124270.
                                                                                                                                                                                                                                                                                                                                                                                                                              08-FEB-2001 (first entry)
                                                                                                                                                                19; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Rosen CA, Ruben SM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 2000-587533/55.
N-PSDB; AAC78180.
                                                                                                                                           Local Similarity
                                                                                   593 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO200055350-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            12-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo saptens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11-SEP-2000.
                                                                                                                                                                                                                                                                                                                                                                                       AAB43971;
                                                                                   Sequence
                                                                                                                                                                                                                                             346
                                                                                                                        Query Match
                                               protein.
                                                                                                                                               Best Loca
Matches
                                                                                                                                                                                                                                                                                                                          AAB43971
                                                                                                                                                                                                                                                                                                                                                                  8888¥8
                                                                                                                                                                                                                                             용
                                                                                                                                                                                                          ö
```

```
ö
rejection, modulate haemostatic or thrombolytic activity, modulate inflammation, cancers, cardiovascular disorders, neurological disease and bacterial or viral infections. The peptides, nucleotides, antibodies, agonists and antagonists may be also be used in drug screens. AAC78449 to AAC78457 and AAB44240 represent sequences used in the exemplification of
                                                                                                                                 Gaps
                                                                                                                               ö
                                                                                                         Length 621;
                                                                                                                               Indels
                                                                                                        DB 21;
5.8e-06;
                                                                                                                                                                                                                                                                                                                                    ET; growth regulation; inhibition; stimulation.
                                                                                                        Score 98; DB
Pred. No. 5.86;
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              page 54"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /label= EP ·
/note= "claim 16, page 54"
                                                                                                                                                                                                                                                                                                                                                                                                                                                        page 54°
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "claim 13, page 54"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "claim 14, page 54"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     note- "claim 18, page 55"
                                                                                                                                                                                                                                                                                                                                                                                                                     "claim 11, page 54"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "claim 17, page 54"
                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                       AAR14325 standard; Protein; 589 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                        "claim 12,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "claim 15,
                                                                                                                                                                                                                                                                                                                                                                                             ..589
| Tabel = precursor
                                                                                                                                                      ó
                                                                                                       Query Match
Best Local Similarity 100.0%;
Matches 19; Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               'label= EP-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 91US-0083796.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (BRIM.) BRISTOL-MYERS SQUIB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            91WO-US02321
                                                                                                                                                                                                                                                                                                                                                                                                                                ,335
                                                                                                                                                                                                                                                                                                             Rat epithelin precursor
                                                             the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Shoyab M, Plowman GD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 1991-325168/44.
N-PSDB; AAQ14338.
                                                                                  621 AA
                                                                                                                                                                                                                                                                                                                                                             Rattus rattus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           03-APR-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 13-MAR-1991;
03-APR-1990;
                                                                                                                                                                                                                                                                                     17-JAN-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              W09115510-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17-0CT-1991
                                                                                                                                                                                                                                                               AAR14325;
                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                    Key
Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                Protein
                                                                                                                                                                                                                 RESULT 8
                                                                                                                                                                                                                             AAR14325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8888888
                                                                                                                                                       ð
                                                                                                                                                                             g
```

```
The epithelins appear to comprise several distinct members sharing significant structural homology. Two members of the epithelin family, BP-1 and EP-2, have been purified from natural sources, and cDNAs encoding these and several other members of the epithelin family have been isolated from rat (AAQ14338), human (AAQ14339), bovine, murine (AAQ14340) and chicken (AAQ14353).
ET-1 is a bifunctional growth regulator, capable of stimulating the growth of some cell types while inhibiting the growth of others. ET-2 is functionally similar to ET-1 w.r. growth inhibitory bloactivity. In contrast, however, ET-2 is apparently not capable of eliciting the growth stimulatory activity characteristic of ET-1 and,
                                                                                                          ET-1 is a bifunctional growth regulator, capable of stimulating the growth of others. ET-2 is functionally similar to ET-1 w.r.t. growth inhibitiony bloactivity. In contrast, however, ET-2 is apparently not capable of eliciting the growth stimulatory activity characteristic of ET-1 and, in fact, antagonises this ET-1 activity characteristic of ET-1 and, see also ARO14338-40, AAO14952-53, AARI4328-9 and AAR15315-20.
                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          New cysteine-rich growth modulating proteins, epithelins - useful as inhibitors of neoplastic cell growth and to promote wound healing and treat psoriasis
        New cysteine-rich growth modulating proteins, epithelins - useful as inhibitors of neoplastic cell growth and to promote wound healing and treat psoriasis
                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                               Score 63; DB 12; Length 589;
Pred. No. 0.65;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ET; growth regulation; inhibition; stimulation.
                                                                                                                                                                                                                                                                                                                  1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bovine epithelin precursor (partial).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAR15426 standard; Protein; 179 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Disclosure; Fig 24; 97pp; English.
                                                                              Disclosure; Fig 18; 97pp; English.
                                                                                                                                                                                                                                                                                                                                                                     :| | || || || || || || || || || || 344 KKVTASLSLPDPQILKNDV 362
                                                                                                                                                                                                                                                                                                                                                   1 EKAPAHLSLPDPQALKRDV 19
                                                                                                                                                                                                                                                                                 64.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             91WO-0S02321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             910S-0083796.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (BRIM ) BRISTOL-MYERS SQUIB.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       17-JAN-1992 (first entry)
                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity 68.49
Watches 13; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Shoyab M, Plowman GD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 1991-325168/44.
N-PSDB; AAQ14952.
                                                                                                                                                                                                                                                 589 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13-MAR-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             03-APR-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              03-APR-1990;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WO9115510-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            17-0CT-1991.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bos taurus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAR15426;
                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 9
AAR15426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                      셤
```

· ;

was obtained from the highly

ö

Length 589;

.......

```
cells. Murine GP88 cDNA (see AAV82824) was obtained from the highly tumorigenic PC cell line. Antagonists to GP88 are used to treat diseases associated with increased expression of GP88, particularly cancer but also viral infections. Fragments of GP88 are used to raise specific antibodies (used as antagonists, as diagnostic reagents and for delivering toxins or other compounds to GP88-expressing cells) and to screen for antibodies. Methods are provided for diagnosing disease, or determining susceptibility to disease, resulting from altered GP88 activity.
                                                                                                                                                          51.0%;
61.1%;
                                                                                                                                                       Query Match : 51.0° Best Local Simflarity 61.1 Matches 11; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2002-267529/31.
                                                                                                                                 589 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SERR/) SERRERO G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        N-PSDB; AAD32849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US2002025543-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    23-MAY-1997;
08-DEC-1999;
                                                                                                                                                                                                                                                                                                                                                        01-JUL-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Serrero G;
                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                              AAE20520;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Region
                                                                                                                                                                                                                                                                            RESULT 11
                                                                                                                                                                                                                                                                                        AAE20520
    8888888888
                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                            ö
                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Composition containing antagonist of growth factor GPB8 - useful for treating cancer and viral diseases and also for diagnosing disease from altered GPB8 expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              This is the amino acid sequence of murine GPBB, an 88 kDa glycoprotein autocrine growth factor and epithilin/granulin precursor that is expressed in a tightly regulated manner in normal cells, is overexpressed and unregulated in highly tumorigenic cells derived from normal cells, and which acts as a stringently required growth stimulator for the tumorigenic cells. Inhibition of GPBB expression or action in the tumorigenic cells results in an inhibition of the tumorigenic properties of the overproducing
                                                                                                                                                                                                                                                                                                              GP88; granulin; epithilin; mouse; growth factor; autocrine; tumour; cancer; viral infection; antagonist; therapy; diagnosis.
                                                                                            ö
in fact, antagonises this ET-1 activity.
See also AAQ14338-40, AAQ14952-53, AAR14328-9 and AAR15315-20.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note= "K19T peptide, used to raise antibody" 562..575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note= "S14R peptide, used to raise antibody"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "P12T peptide used to raise antibody"
                                                                                           4; Indels
                                                                                          3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                       note- "encoded by CTG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                       encoded by TGA"
                                                                                                                                                                                                                                                                                                                                                                                                                               note- "encoded by AGC"
                                                                Score 53;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                                    Mouse GP88 autocrine growth factor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Example 5; Fig 8A-D; 86pp; English.
                                                                                                                                                                                                         AAW85474 standard; Protein; 589 AA.
                                                                                                                                  1 EKAPAHLSLPDPQALKRDV 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       970S-0991862,
970S-0863079,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               98WO-US10555
                                                                                                                                                                                                                                                            (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                               ,0..219
/note= "r-
                                                                           Best Local Similarity 63.2
Matches 12; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              344..362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 1999-045276/04.
                                        179 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (SERR/) SERRERO G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          N-PSDB; AAV82824
                                                                                                                                                                                                                                                                                                                                                                                         Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                    Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                            Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16-DEC-1997;
23-MAY-1997;
                                                                                                                                                                                                                                                            15-MAR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WO9852607-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             22-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    26-NOV-1998
                                        Seguence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Serrero G;
                                                                                                                                                                                                                                   AAW85474;
                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Peptide
                                                                                                                                                                                                                                                                                                                                                      Mus sp
                                                                                                                                                                                 RESULT 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SSXS
                                                                                                                   ð
                                                                                                                                         셤
```

```
Mouse; granulin precursor; GP88; cytostatic; tumourigenicity; tamoxifen; antineoplastic; antioestrogen therapy; skin cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GP88
                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The invention relates to a method for diagnosing tumourigenicity in a human. The method comprises obtaining a biological sample containing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           used as antigens to raise anti-GP88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   anti-GP88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Diagnosing tumorigenicity in a human, comprising obtaining a cell sample, detecting GP88 in the cells, and determining the number of positive cells in the sample .
                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     antigens to raise
                                               Indels
                                                                                                                                                                                                                                                                                                                                                    Mouse granulin/epithelin precursor (GP88) protein.
DB 50;
      Score 50; DB 2
Pred. No. 50;
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /label- Unknown
/note- "Encoded by ATG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   nseq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ρλ
                                                                                                                                                                                                                                Æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Disclosure; Fig 8; 50pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note= "Regions
antibodies"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            562..575
/note= "Regions
                                                                                                                                                                                                                            AAE20520 standard; Protein; 589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note- *Encoded
                                                                                                            1 EKAPAHLSUPDPQALKRD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 15-JUN-2001; 2001US-0880842.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       970S-0863079.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 antibodies
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      344..362
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The invention relates to isolated polynucleotide (I) and polypeptide (II) sequences. (I) is useful as hybridisation probes, polymerse chain reaction (PCR) primers, oligomers, and for chromosome and gene mapping, and in recombinant production of (II). The polynucleotides are also used in diagnostics as expressed sequence tags for identifying expressed genes. (I) is useful in gene therapy techniques to restore normal activity of (II) or to treat diseases states involving (II). (II) is useful for generating antibodies against it, detecting or quantitating a polypeptide in tissue, as molecular weight markers and as a food supplement. (II) and its binding partners are useful in medical
cells from the patient, detecting GPB8 in the cells of the sample, and determining the number of GPB8 positive cells in the sample, and determining the ratio of GPB8 positive cells to the total number of cells in the sample. The invention also relates to a method for determining if a human patient is resistant to the antineoplastic effects of anticestrogen therapy. The method is useful for diagnosing tumourigenicity in a sample, such as blood, serum, plasma, urine, nipple aspirate, cerebrospinal fluid, liver, kidney, breast, bone, brain, ling, colon, or skin cancer. The method can be used to treat or prevent re-occurrence of cancer in a patient, by administering tamoxifen if the sample contains less than 10 % GPB8, or less than 5 % GPB8 positive cells. The present sequence is mouse granulin/epithelin precursor (GPB8)
                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                New isolated polynucleotide and encoded polypeptides, useful in diagnostics, forensics, gene mapping, identification of mutations responsible for genetic disorders or other traits and to assess
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              o; chromosome mapping; gene mapping; gene therapy; forensic; supplement; medical imaging; diagnostic; genetic disorder.
                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                             Score 50; DB 23; Length 589;
Pred. No. 50;
Mismatches 6; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 20; SEQ ID No 58807; 103pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Novel human diagnostic protein #28439.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ABG28448 standard; Protein; 730 AA.
                                                                                                                                                                                                                                                                                                                                                                                                              1 EKAPAHLSLPDPQALKRD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Tang YT;
                                                                                                                                                                                                                                                                                                             ch 51.0%;
1 Similarity 61.1%;
11; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    30-MAR-2001; 2001WO-US08631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             23-AUG-2000; 2000US-0649167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2001-639362/73.
N-PSDB; AAS92635.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Drmanac RT, Liu C,
                                                                                                                                                                                                                                                                           589 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (HYSE-) HYSEQ INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO200175067-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            31-MAR-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               biodiversity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      18-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ABG28448;
                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                 Query Match
Best Local S
                                                                                                                                                                                                                                       protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ABG28448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                              셤
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The present invention describes primer sets for synthesising 5602 full-length cDNAs defined in the specification. Where a primer set comprises: (a) an oligo-dT primer and an oligo-ubicleotide complementary to the complementary strand of a polynucleotide which comprises one of the 5602 nucleotide sequences defined in the specification, where the oligonucleotide comprises at least 15 nucleotides; or (b) a combination of an oligonucleotide comprising a sequence complementary to the complementary strand of a polynucleotide which comprises a 5'-end sequence and an oligonucleotide comprising a sequence complementary to a polynucleotide comprising a sequence complementary to a
imaging of sites expressing (II). (I) and (II) are useful for treating disorders involving aberrant protein expression or biological activity. The polypeptide and polynucleotide sequences have applications in diagnostics, forensics, gene mapping, identification of mutations responsible for genetic disorders or other traits to assess biodiversity and to produce other types of data and products dependent on DNA and amino acid sequences. ABG00010-ABG30377 represent novel human diagnostic amino acid sequences of the invention.
                                                                                                                                                   Note: The sequence data for this patent did not appear in the printed specification, but was obtained in electronic format directly from WIPO at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Primer sets for synthesizing polynucleotides, particularly the 5602 full-length cDNAs defined in the specification, and for the detection and/or diagnosis of the abnormality of the proteins encoded by the full-length cDNAs -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human; primer; detection; diagnosis; antisense therapy; gene therapy.
                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Yamamoto J;
                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                 DB 22; Length 730;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Saito K, Ya
Otsuki T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 8; SEQ ID 14834; 2537pp + CD ROM; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Hayashi K, Sa
A, Nagai K,
                                                                                                                                                                                                                                                                                        43.8%; Pred. No. 89;
tive 7; Mismatchès
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human protein sequence SEQ ID NO:14834.
                                                                                                                                                                                                                                                                     50.0%; Score 49;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAB94335 standard; Protein; 324 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Isogai T, Nishikawa T,
Sugiyama T, Wakamatsu
                                                                                                                                                                                                                                                                                                                                                                    :||::::||| ||:
637 EAPSYIAVPDPSVLKQ 652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99JP-0300253.
2000JP-0118776.
2000JP-0183767.
2000JP-0241899.
                                                                                                                                                                                                                                                                                                                                               2 KAPAHLSLPDPQALKR 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               28-JUL-2000; 2000EP-0116126.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      26-JUN-2001 (first entry)
                                                                                                                                                                                                                                                                                        Best_Local Similarity 43.8
Matches 7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (HELI-) HELIX RES INST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2001-318749/34.
                                                                                                                                                                                                                                  730 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EP1074617-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        27 - AUG - 1999;
L1 - JAN - 2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            02-MAY-2000;
09-JUN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             07-FEB-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    29-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ishii S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAB94335;
                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAB94335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
         8888888888888
```

```
ö
          the 5'-end sequence/3'-end sequence is selected from those defined in the specification. The primer sets can be used in antisense therapy and in gene therapy. The primers are useful for synthesising polynucleotides, particularly full-length cDNAs. The primers are also useful for the detection and/or diagnosis of the abnormality of the proteins encoded by the full-length cDNAs. The primers allow obtaining of the full-length cDNAs easily without any specialised methods. AAM63166 to AAM13628 and AAM13633 to AAM18632 represent human amino acid sequences; and AAM13629 to AAM13632 represent oligonucleotides, all of which are used in the exemplification
 oligonucleotide comprises at least 15 nucleotides and the combination of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Wang D;
                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              peripheral nervous system; neuropathy; central nervous system; CNS; Alzhehmer is; Parkinson's disease; Huntington's disease; harbenesthic; amyotrophic lateral sclerosis; Shy-Drager Syndrome; chemotactic; chemokinetic; thrombolytic; drug screening; arthritis; inflammation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Novel nucleic acids and polypeptides, useful for treating disorders such as central nervous system injuries -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ren F, W
Zhang J;
                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                           DB 22; Length 324;
                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Olan XB,
Yang Y,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ten R, Ma Y, C
tu C, Xue AJ,
Drmanac RT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Example 4; SEQ ID NO 2819; 10078pp; English.
                                                                                                                                                                                                         Score 47; DB Pred. No. 71; Pred. No. 71; 2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Chen R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               χn c,
                                                                                                                                                                                                                                                                                                                                                                 AAM39674 standard; Protein; 828 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human polypeptide SEQ ID NO 2819.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 YF, Liu C, Asundi V, Ch
J, Wang Z, Wehrman T, X
QA, Zhou P, Goodrich R,
                                                                                                                                                                                                                                     ;
                                                                                                                                                                                                                                                                                 |: | | | ||: |||
175 ERPPVHDQLQDPRLLKR 191
                                                                                                                                                                                                                                                                 1 EKAPAHLSLPDPQALKR 17
                                                                                                                                                                                                         48.0%;
52.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2000US-0552317.
2000US-0598042.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2000US-0653450.
2000US-0662191.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             26-DEC-2000; 2000WO-US34263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20000S-0620312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2000US-0693036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2000US-0727344
                                                                                                                                                                                                                                       Conservative
                                                                                                                                                   of the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 2001-442253/47.
N-PSDB; AAI58830.
                                                                                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                                               324 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (HYSE-) HYSEQ INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO200153312-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       25-APR-2000;
09-JUL-2000;
19-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19-OCT-2000;
29-NOV-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                03-AUG-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          21-JAN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                          22-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    26-JUL-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       leukaemia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Tang YT,
Wang J, V
Zhao QA,
                                                                                                                                                                                                                                                                                                                                                                                             AAM39674;
                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                       fatches
                                                                                                                                                                                                                                                                                                                                       RESULT 14
                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                 à
```

The invention relates to human nucleic acids (AAI57798-AAI61369) and

```
ö
        immunosuppressant and cytostatic activity. The polymucleotides are useful in gene therapy. A composition containing a polypeptide or polymucleotide of the juvention may be used to treat diseases of the peripheral nervous system, such as peripheral nervous injuries, peripheral nervous alocalised neuropathis and central nervous system diseases, such as Alzheimer's, parkinson's disease, Huntington's disease, ampotrophic lateral sclerosis, and Shy-Drager Syndrome. Other uses inclide the utilisation of the activities such as: Immune system suppression, Activin/inhibin activity, chemotactic/chemokinetic activity, haemostatic assistant the and thromomolytic activity, arthritis and therapy, drug screening, assays for receptor activity, arthritis and inflammation, leukaemias and C.N.S disorders.
                                                                                                                                                                                                                 The sequence data for this patent did not form part of the printed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The present invention describes primer sets for synthesising 5602 full-length cDNAs defined in the specification. Where a primer set comprises: (a) an Oilgo-dr primer and an Oilgonuclectide complementary to the complementary strand of a polynucleotide which comprises one of the 5602 nucleotide sequences defined in the specification, where the oligonucleotide comprises at least 15 nucleotides; or (b) a combination
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Primer sets for synthesizing polynucleotides, particularly the 5602 full-length cDNAs defined in the specification, and for the detection and/or diagnosis of the abnormality of the proteins encoded by the full-length cDNAs.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human; primer; detection; diagnosis; antisense therapy; gene therapy.
                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                        ;
0
polypeptides (AAM38642-AAM42213) with nootropic,
                                                                                                                                                                                                                                                                                                     Length 828;
                                                                                                                                                                                                                                                                                                                                        6; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              hikawa T, Hayashi K, Saito K, Yi
Wakamatsu A, Nagai K, Otsuki T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 8; SEQ ID 11690; 2537pp + CD ROM; English.
                                                                                                                                                                                                                                                                                                     DB 22;
2e+02;
                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                       Score 47;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human protein sequence SEQ ID NO:11690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAB92977 standard; Protein; 828 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Isogai T, Nishikawa T,
Sugiyama T, Wakamatsı
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99JP-0248036.
99JP-0300253.
2000JP-0118776.
2000JP-0183767.
2000JP-0241899:
                                                                                                                                                                                                                                                                                                                                                                          17
                                                                                                                                                                                                                                                                                                       48.0%;
52.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28-JUL-2000; 2000EP-0116126
                                                                                                                                                                                                                                                                                                                                                                                              1 EKAPAHLSLPDPQALKR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   26-JUN-2001 (first entry)
                                                                                                                                                                                                                                                                                       Ouery Match
Best Local Similarity 52.97
Best Local Similarity 52.97
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (HELI-) HELIX RES INST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 2001-318749/34.
                                                                                                                                                                                                                                                                       828 AA;
                                                                                                                                                                                                                                   specification.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        02-MAY-2000;
09-JUN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EP1074617-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          27-AUG-1999;
11-JAN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        29-JUL-1999;
 encoded
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      07-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ishii S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAB92977;
                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ota T,
                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAB92977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 88888888888888888888
                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                          a
```

complementary strand of a polyuocleotide which comprises a 5 -end sequence and an oligonucleotide which comprises a 5 -end sequence and an oligonucleotide comprises a 3 -end sequence complementary to a polynucleotide which comprises a 1 -end sequence complementary to a oligonucleotide which comprises a 1 -end sequence of the 5 -end sequence is selected from those defined in the specification. The primer sets can be used in antisense therapy and in gene therapy. The primers are useful for synthesising polynucleotides, particularly full-length convar are useful for synthesising polynucleotides, particularly full-length convar are also useful for the detection and/or diagnosis of the abnormality of the proteins encoded by the full-length convar are primers allow obtaining of the full-length convar and sequences; AAR03166 to AAH13628 and AAH13639 to AAH13639 represent human amino acid sequences; and AAH13639 to AAH13632 represent oligonucleotides, all of which are used in the exemplification of an oligonucleotide comprising a sequence complementary to the of the present invention. 

828 AA; Sequence

0; Gaps Ouery Match

48.0%; Score 47; DB 22; Length 828;
Best Local Similarity 52.9%; Pred. No. 2e+02;
Matches 9; Conservative 2; Mismatches 6; Indels

ö

1 EKAPAHLSLPDPQALKR 17

|: | | | ||: ||| 679 ERPPVHDQLQDPRLLKR 695

a ð

Search completed: July 8, 2003, 16:24:16 Job time: 48.5 secs

```
Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                            July 8, 2003, 16:21:00; Search time 11.6923 Seconds (Without alignments) 47.812 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      262574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /cgn2_6/ptodata/1/laa/5A_COMB.pep:*
/cgn2_6/ptodata/1/laa/5B_COMB.pep:*
/cgn2_6/ptodata/1/laa/6B_COMB.pep:*
/cgn2_6/ptodata/1/laa/6B_COMB.pep:*
/cgn2_6/ptodata/1/laa/pcruS_COMB.pep:*
/cgn2_6/ptodata/1/laa/pcruS_COMB.pep:*
GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                            262574 seqs, 29422922 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                  OM protein - protein search, using sw model
                                                                                                                                                                                                                                               US-09-824-647-6
98
1 EKAPAHLSLPDPQALKRDV 19
                                                                                                                                                                                                                                                                                                                                                      BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Issued_Patents_AA:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                    Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                                                                                         Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                    Searched:
                                                                                                                                                    Run on:
```

Description	ý v	Sequence 4, Appli	4	17,	<b>→</b> (	Sequence 2, Appli	i	7	8	8	8	8	'n	'n	Sequence 6, Appli	ģ	Sequence 6, Appli	ý,	Sequence 8, Appl1	Sequence 2, Appli	Sequence 2, Appli	Sequence 2, Appli	Sequence 32, Appl	Sequence 6, Appli	Sequence 33, Appl
															-										
ID	US-08-991-862-6	US-08-429-998-4	US-08-431-333-4	US-08-991-862-17	PCT-US91-02321-4	US-U/-668-648-2	US-08-431-333-2	PCT-US91-02321-2	US-07-668-648-8	US-08-429-998-8	US-08-431-333-8	PCT-US91-02321-8	US-08-991-862-2	US-08-991-862-3	US-07-668-648-6	US-08-429-998-6	US-08-431-333-6	PCT-US91-02321-6	US-08-807-342B-8	US-08-136-277-2	US-08-479-403-2	US-08-835-734-2	US-09-315-793-32	US-08-525-864A-6	US-08-753-007A-33
E D	₹-	4 (7	7	₹	ų,	<b>⊣</b> ℃	۱ (۱	S	-	~	~	S	4	4	-	~	~	S	m	-		m	4	~	<del>-</del>
Length DB	19	593	593	593	593	א מ מ מ	583	589	179	179	179	179	589	19	589	589	589	589	409	745	745	745	408	131	139
& Query Match	100.0	100.0	100.0	100.0	100.0	64.3	64.3	64.3	54.1	54.1	54.1	54.1	51.0	44.9	44.9	44.9	44.9	44.9	41.8	41.8	41.8	41.8	41.3	40.8	40.8
Score	86	. 86	86	86	86	. 63	63	63	53	53	53	53	20	44	44	44	44	44	41	41	41	41	40.5	40	40
Result No.	÷.	4 m	4	S.	9	~ α	0	10	11	12.	13	14	15	16	17	18	19	50	21	22	23	24	25	56	27

SUMMARIES

US-07-668-648-4

| Sequence 4, Application US/07668648
| Sequence 4, Application US/07668648
| Patent No. 341619-1
| GENERAL INFORMATION:
| APPLICANT: Shoyab, Mohammed
| APPLICANT: Plowman, Gragory D. TITLE OF INVENTION: MODULATING PROTEINS |
| TITLE OF INVENTION: MODULATING PROTEINS |
| TITLE OF SEQUENCES: 12 |
| TORRESPONDENCE ADDRESS: ADDRESSE: ADDRES

	•	:0
Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli		<i>w</i>
w44wwwwwwww40000	STS	ody. Gaps
	AND ANTAGONIST	develop antibody '; 0; Ga
sedneuce sed	· .	· ·
9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	D. AN	sed to octonal ngth 19 Indels
		18 used to monoclonal Length 19 7; Indels
	ENTS GROWTH FACTOR 362	88 1 mor 0; 0;
w4	F.	of human GP88 mc-human GP88 mc 98; D8 4; No. 8.7e-10; matches 0;
-496-496-496-496-496-496-496-496-496-496	OWTE	uman an Gi DB 8.76 hes
-398 496-33 -753-007A-4 -233-609-4 -444-083-3 -246-304-3 -443-152-3 -443-152-3 -443-152-3 -443-152-3 -106-182-3 -106-182-3 -525-64467-3 -525-6467-4 -753-007A-6	ALIGNMENT 2 2 GENIC GRO 7991, 862 3, 862	ide of huma anti-human core 98; D red. No. 8. Mismatches
99-398 99-398 99-398 99-398 99-106 99-398 99-398 99-398 99-398 99-398 99-398	ENIC 991, ,862	
US-09-398-496-33 US-08-753-0078-4 US-08-233-609-3 US-08-233-609-3 US-08-44-08-3 US-08-44-08-3 US-08-44-3-129-3 US-08-44-3-129-3 US-08-44-3-129-3 US-08-43-130-3 US-08-09-106-182-3 US-08-09-106-182-3 US-08-09-1398-496-6 US-08-753-0078-6 US-08-753-0078-6 US-08-753-0078-6 US-08-753-0078-6	ALIGNA on US/08991862 Ginette 88 KDA TUMORIGENIC 6488/P001-A NUMBER: US/08/991, E 1998-08-17 1997-05-23 : 17 er. 2.0	Internal peptide neutralizing anti neutralizing anti 100.0%; Score 100.0%; Pred vative 0; Mis neutre 19
4 & 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	A US/08991862 nn US/08991862 sinette R KDA TUMORIG 5.488/P001-A UMBER: US/08/17 UMBER: 08/863 1997-05-23 1977-05-23 17 sr. 2.0	1 pe 1zir 1zir 0%; 0%; 0%; 1
	(S/0) (S/0)	ernal; traliz. 100.0% 100.0% ive QALKRD
139 181 181 181 203 203 203 203 203 203 203 407 469	ation US/0 N. Ginette NR. 88 KDA 19996.488/P CON NUMBER: TE: 1998-0 CON NUMBER: TE: 1997-0 TON NUMBER: TE: 1997-0 TON NUMBER: TON NUMBER: TON NUMBER: TON NUMBER: TON NUMBER: TON NUMBER:	TIDE(19) TION: Intern TION: neutra IION: neutra locaservative PAHLSLPDPQAL
<b>&amp;&amp;&amp;</b> & <b>&amp;&amp;&amp;&amp;&amp;&amp;&amp;&amp;&amp;&amp;&amp;</b>	/ <del>-</del>	119) NN: ON: ILSL ILSL
444444444444444	6 Application 6309826 ORMATION: Serrero, Gi Serrero, Gi EENCE: 29996. PELICATION NU PELICATION NU	PEPTIDE (1)(19) RMATION: Internal por RMATION: neutralizio 6 Internativa 100.0%; imilarity 100.0%; Conservative EKAPAHLSIPDPQALKEDV
00000000000000000	62-6 6, Applicatio 6309826 NFORMATION: INVENTION: ERENCE: 2999 APPLICATION: FILLING DATE: APPLICATION PELLING DATE: PELLING DATE: PELLING DATE: PAPPLICATION NOS: 19	ററ മര
<b>~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~</b>	ULT 1  08-991-862-6  atent 6, Application US/08991862  atent No. 6309826  ENERAL INFORMATION:  TITLE OF INVENTION: 88 KDA TUMORIGENI  FILE REFERENCE: 29996.488/P001-A  CURRENT APPLICATION NUMBER: US/08/991  CURRENT FILING DATE: 1998-08-17  EARLIER FILING DATE: 1997-05-23  NUMBER OF SEQ ID NOS: 17  SOFTWARE: PATENTIN Ver. 2.0  EQ ID NO 6  EQ ID NO 6  TIPN OF THE ORGANISM: HUMBER: 08/863,86  TYPE: PRT  ORGANISM: HUMBER OF THE ORGANISM: 1998-06-13	ION ION ION ION ION Cal
	SULT 1 SULT 1 Sequence 6 Patent No. GENERAL IN APPLICANT TITLE OF FILE REFE CURRENT A CORGANISM	NAME LOCAT LOCAT OTHER OTHER OUGLY M BEST LO
00000000000000044444 00001000000000010040	to i to ci to	O new Mark
. •	A D T T T T T T T T T T T T T T T T T T	oy oy

```
ö
                                                                                                                                                                                                                                                                                                                                             Sequence 4, Application US/08431333
Patent No. 5965723
GENERAL INFORMATION:
APPLICANT: Shoyab, Mohammed
APPLICANT: Plowman, Gregory D.
TITLE OF INVENTION: EPITHELINS: NOVEL CYSTEINE-RICH GROWTH
TITLE OF INVENTION: MODULATING PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 98; 'DB 2; Length 593;
Pred. No. 4.9e-08;
                                                                                                  Length 593;
                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/431,333
FILING DATE: 27.APR-1995
CLASSIFICATION: 536
PRIOR APPLICATION DATA:
                                                                                                                           4.9e-08;
                                                                                                  Query Match 100.0%; Score 98; DB 2; Best Local Similarity 100.0%; Pred. No. 4.9e-06 Matches' 19; Conservative 0; Mismatches (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE: Pennie & Edmonds
STREET: 1155 Avenue of the Americas
CITY: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: US 07/668,648
FILING DATE: 13-MAR-1991
ATORNEY/AGENT INFORMATION:
NAME: MAISTOCK, S. Leslie
REGISTRATION NUMBER: 18,872
REFERENCE/DOCKET NUMBER: 5624-161-99
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 17, Application US/08991862
Patent No. 6309826
                                                                                                                                                                                                                    346 EKAPAHLSLPDPQALKRDV 364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               346 EKAPAHLSLPDPQALKRDV 364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 EKAPAHLSLPDPQALKRDV 19
                                                                                                                                                                                           1 EKAPAHLSLPDPQALKRDV 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 100.0%;
Best Local Similarity 100.0%;
Matches 19; Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEFAX: (212) 869-9741
INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Serrero, Ginette
                  ; TOPOLOGY: linear; MOLECULE TYPE: protein US-08-429-998-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; MOLECULE TYPE: protein US-08-431-333-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQUENCES: 1. CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 5
US-08-991-862-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNTRY:
                                                                                                                                                                                                                                                                                                                             JS-08-431-333-4
                                                                                                                                                                                               ð
                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 4, Application US/08429998
Patent No. 5885961
GENERAL INFORMATION:
APPLICANT: Shoyab, Mohammed
APPLICANT: Plowman, Gregory D.
TITLE OF INVENTION:
TITLE OF INVENTION: PPITHELINS: NOVEL CYSTEINE-RICH GROWTH
TITLE OF INVENTION: MODULATING PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 593;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ZIP: 10036
COMPUTER REABABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CUBRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/429,998
FILING DATE: 27-APR-1995
CLASSIFICATION: 514
PRIOR APPLICATION NUMBER: US 07/668,648
FILING DATE: 13-MAR-1991
ATTORNEY/AGENT INFORMATION:
NAME: MISTOCK, S. Leslie
REGISTRATION NUMBER: 18,872
REGISTRATION NUMBER: 18,872
REGISTRATION NUMBER: 18,872
                             MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PATENTIN Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/668,648
FILING DATE: 19910819
CLASSIRICATION: 514
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4.9e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 100.0%; Score 98; DB 1;
Best Local Similarity 100.0%; Pred. No. 4.9e-08
Matches 19; Conservative 0; Mismatches 0
                                                                                                                                                                                                         NAME: Misrock, S. Leslie
REGISTRATION NUMBER: 18,872
REFERENCE,/DOCKET NUMBER: 5624-161-999
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE OF INVENTION: EFITHELINS: NOVEL TITLE OF INVENTION: MODULATING PROTEIN UNMER OF SEQUENCES: 12 CORRESPONDENCE ADDRESS: Pennie & Edmonds STREET: Pennie & Edmonds STREET: 1155 Avenue of the Americas CITY: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEFAX: (212)790-9090
TELEFAX: (212) 869-9741
INPORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
LENGTH: 593 amino acids
TYPE: AMINO ACID
TOPOLOGY: line-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ELECOMMUNICATION INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MOLECULE TYPE: protein US-07-668-648-4
                  COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STATE: New York COUNTRY: USA ZIP: 10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-08-429-998-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 3
```

ò 셤

```
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               USA
                                                                                                                                                                                                                                                                                        COUNTRY: USA
ZIP: 10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADDRESSEE:
STREET: 11
                                                                                                                                                                                                                                                                                                                                                                               COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STATE: Ne COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 8
US-08-429-998-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS FILE REPERENCE: 29996.488/P001-A
CURRENT APPLICATION NUMBER: US/08/991,862
CURRENT FILING DATE: 1998-08-17
EARLIER APPLICATION NUMBER: 08/863,862
EARLIER FILING DATE: 1997-05-23
NUMBER OF SEQ ID NOS: 17
SOFTWARE: Patentin Ver: 2.0
SEQ ID NO1 17
LENGTH: 593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gregory D. EPITHELINS: NOVEL CYSTEINE-RICH GROWTH MODULATING PROTEINS
                                                                                                                                                                                                                                                                                             Length 593;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 593;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOFTWARE: Patentin Release #1.0, Version #1.25-
CUBRENT APPLICATION DATA:
CALICATION NUMBER: PCT/US91/02321
FILING DATE: 19910403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4.9e-08;
                                                                                                                                                                                                                                                                                                                    4.9e-08;
                                                                                                                                                                                                                                                                                          Query Match 100.0%; Score 98; DE
Best Local Similarity 100.0%; Pred. No. 4.9
Matches 19; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE OF INVENTION: EPITHELINS: NOVEL CYST TITLE OF INVENTION: MODULATING PROTEINS NUMBER OF SEQUENCES: 1.2 CORRESPONDENCE ADDRESSE: BLISTOL-MYETS SQUIBD COMPANY STREET: 3005 First Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 98;
Pred. No. 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 4, Application PC/TUS9102321
GENERAL INFORMATION:
APPLICANT: Shoyab, Mohammed
APPLICANT: Plowman, Gregory D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CLASSIFICATION: 514
ATTORNEY/AGENT INFORMATION:
NAME: POOT, BITAN NAMES: 32,928
REFERENCE/DOCKET NUMBER: 0000'
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     346 EKAPAHLSLPDPQALKRDV 364
                                                                                                                                                                                                                                                                                                                                                                               1 EKAPAHLSLPDPQALKRDV 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity 100.0%;
Matches 19; Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELEPHONE: (206)728-4800
TELEFAX: (206)448-4775
INFORMATION FOR SEQ ID NO: 4.
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                            ORGANISM: Human GP88 CDNA US-08-991-862-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; MOLECULE TYPE: protein
PCT-US91-02321-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CITY: Seattle
STATE: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: AMINO ACID
                                                                                                                                                                                                             TYPE: PRT
```

à g RESULT

```
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Shoyab, Mohammed
APPLICANT: Plowman, Gregory D.
TITLE OF INVENTION: EPITHELINS: NOVEL CYSTEINE-RICH GROWTH
TITLE OF INVENTION: MODULATING PROFEINS
                                                        APPLICANT: Shoyab, Mohammeu
APPLICANT: Shoyab, Mohammeu
APPLICANT: Plowman, Gregory D.
TITLE OF INVENTION: EPITHELINS: NOVEL CYSTEINE-RICH GROWTH
TITLE OF INVENTION: MODULATING PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                 SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/07/668,648 FILING DATE: 19910819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1; Mismatches
                                                                                                                                                                                         ADDRESSEE: Pennie & Edmonds
STREET: 1155 Avenue of the Americas
CITY: New York
STATE: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOFTWARE: FULL DATA:
CURRENT APPLICATION DATA:
TITLE NITH MEER: US/08/429,998
                                                                                                                                                                                                                                                                                                                                                                          IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 2, Application US/08429998 Patent No. 5885961 GENERAL INFORMATION:
Sequence 2, Application US/07668648
Patent No. 5416192
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               :| | |||||||| || || || 344 KKVTASLSLPDPQILKNDV 362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 EKAPAHLSLPDPQALKRDV 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pennie & Edmonds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTORNEY/AGENT INFORMATION:
NAME: MISTOCK, S. Leslie
REGISTRATION NUMBER: 18,87;
REFERENCE/DOCKET NUMBER: 56
TELECOMMUNICATION INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEPHONE: (212)790-9090
TELEFAX: (212) 869-9741
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
LENGTH: 589 amino acids
TYPE: AMINO ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  64.3%;
68.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                    COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity 68.49
----hes 13; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-07-668-648-2
                                                                                                                                                          NUMBER OF SEQUENCES: 1. CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQUENCES: 1 CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                   OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     New York
New York
```

```
Gaps
                                           Gaps
                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Shoyab, Mohammed
APPLICANT: Plowman, Gregory D.
TITLE OF INVENTION: EPITHELINS: NOVEL CYSTEINE-RICH GROWTH
TITLE OF INVENTION: MODULATING PROTEINS
NUMBER OF SEQUENCES: 12
                                                                                                                                                                                                                                                                                  , Gregory D.
EPITHELINS: NOVEL CYSTEINE-RICH GROWTH MODULATING PROTEINS
Length 589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 589;
                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOFTWARE: Patentin Release #1.0, Version #1.25
UURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US91/02321
                                                                                                                                                                                                                                                                                                                                                                                E: Bristol-Myers Squibb Company 3005 First Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CORRESPONDENCE ADDRESS:
ADDRESSEE: Pennie & Edmonds
STREET: 1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                      Sequence 2, Application PC/TUS9102321 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; Sequence 8, Application US/07668648
; Patent No. 5416192
                                                                                                     344 KKVTASLSLPDPQILKNDV 362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               344 KKVTASLSLPDPQILKNDV 362
                                                                                 1 EKAPAHLSLPDPQALKRDV 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME: POOr, Brian W.
REGISTRATION NUMBER: 32,928
REFERENCE/DOCKET NUMBER: ON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RELECOMMUNICATION INFORMATION
  64.3%;
milarity 68.4%;
Conservative
                                                                                                                                                                                                                                                           APPLICANT: (Shoyab, Mohammed APPLICANT: (Plowman, Gregory TITLE OF INVENTION: EPITHEL. TITLE OF INVENTION: MODULAT: NUMBER OF SEQUENCES: 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LENGTH: 589 amino acids TYPE: AMINO ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 64.3
Best Local Similarity 68.4
Matches 13; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  19910403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; MOLECULE TYPE: protein PCT-US91-02321-2
                                                                                                                                                                                                                                                                                                                                                               CORRESPONDENCE ADDRESS: ADDRESSE: Bristol-M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                            STATE: Washington COUNTRY: USA
Query Match
Best Local Similarity
Matches 13; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                       STREET: 3005 F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      98121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TOPOLOGY:
                                                                                                                                                                                                       PCT-US91-02321-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-07-668-648-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ð
                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 2, Application US/08431333
Patent No. 5965723
GENERAL INFORMATION:
APPLICANT: Shoyab, Mohammed
APPLICANT: Plowman, Gregory D.
TITLE OF INVENTION: EPITHELINS: NOVEL CYSTEINE-RICH GROWTH
TITLE OF INVENTION: MODULATING PROFIENS
                                                                                                                                                                                                                                                                                                                                                                                                           DB 2; Length 589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ZIF: 10030
COMPUTER TREADABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DAFA:
APPLICATION NUMBER: US/08/431,333
FILING DATE: 27-APR-1995
CLASSIFICATION: 536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/668,648
FILING DATE: 13-MAR-1991
ATTORNEY/AGENT INFORMATION:
NAME: MISTOCK, S. Leslie
REGISTRATION NUMBER: 18,872
FEECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212)790-9090
                                                                                                                                                                                                                                                                                                                                                                                                                                                1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                           Score 63;
                                                          APPLICATION NUMBER: US 07/668,648
FILING DATE: 13-MAR-1991
ATTONNEY/AGEN: INFORMATION:
NAME: Misrock, S. Leslie
REGISTRATION NUMBER: 18,872
REFERNICE/DOCKET NUMBER: 5624-161-99
TELEPHONE: (212)790-9090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            E: Pennie & Edmonds
1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                Pred
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 EKAPAHLSLPDPQALKRDV 19
                                                                                                                                                                                                                                                                                                                                                                                                         64.3%;
68.4%;
    27-APR-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEPHONE: (212)790-9090
TELEFAX: (212) 869-9741
INFORMATION FOR SEQ ID NO: 2
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                  TELEFAX: (212) 869-9741
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 589 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          : 589 amino acids
amino acid
                                                                                                                                                                                                                                                                                    : 589 amino acids
amino acid
                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 64.3
Best Local Similarity 68.4
Matches 13; Conservative
FILING DATE: 27-APR-1
CLASSIFICATION: 514
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                        ; MOLECULE TYPE: protein US-08-429-998-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CORRESPONDENCE ADDRESS:
ADDRESSEE: Pennie &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           New York
I: New York
IRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ZIP: 10036
                                                                                                                                                                                                                                                                                                                          ropology:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-08-431-333-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CITY: N
STATE:
```

g

```
Gaps
                                                                                                                             .
%.:
                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
APPLICANT: Shoyab, Mohammed
APPLICANT: Plowmen, Gregory D.
TITLE OF INVENTION: EPITHELINS: NOVEL CYSTEINE-RICH GROWTH
TITLE OF INVENTION: MODULATING PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 179;
                                                                                                                Length 179;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4; Indels
                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 53; DB 2;
Pred. No. 0.25;
                                                                                                              DB 2;
                                                                                                                Score 53; DB 2
Pred. No. 0.25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3; Mismatches
                                                                                                                                                       3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION: 536
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/668,648
FILING DATE: 13-MAR-1991
ATORNEY/AGENT INFORMATION:
NAME: MISTOCK, S. Leslie
REGISTRATION NUMBER: 18,872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEE: Pennie & Edmonds
: 1155 Avenue of the Americas
New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/431,333
FILING DATE: 27-APR-1995
CLASSIFICATION: 536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 8, Application PC/TUS9102321 GENERAL INFORMATION: APPLICANT: Shoyab, Mohammed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          :||||||||||| | |:: ||
118 KKAPAHLSLLDLGAVEGDV 136
                                                                                                                                                                                                                 US-08-431-333-8
; Sequence 8, Application US/08431333
; Patent No. 5965723
                                                                                                                                                                                           1 EKAPAHLSLPDPQALKRDV 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE/DOCKET NUMBER: 56
FELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       54.1%;
63.2%;
                                                                                                            Query Match 54.1%;
Best Local Similarity 63.2%;
Matches 12; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELEFAX: (212) 869-9741
INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LENGTH: 179 amino acids TYPE: amino acid
179 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity 63.28
Matches 12; Conservative
                                              ; MOLECULE TYPE: protein US-08-429-998-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-431-333-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQUENCES: 11 CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                      amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    New York
Y: USA
                                        linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PCT-US91-02321-8
                                        TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STATE: N
COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STREET:
  LENGTH:
                                                                                                                                                                                                                                                                                              RESULT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 8, Application US/08429998
Patent No. 5885961
BAPLICANT: Shoyab, Mohammed APPLICANT: Shoyab, Mohammed APPLICANT: Plowman, Gregory D. TITLE OF INVENTION: PPTHELINS: NOVEL CYSTEINE-RICH GROWTH TITLE OF INVENTION: MODULATING PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 1; Length 179;
                                    COMPOTER READABLE FORM:
MEDIUM TYPE: Floppy disk
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC Compatible
OPERATING SISTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
FILING DATE: 19910919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 53; DB 1
Pred. No. 0.25;
3; Mismatches
                                                                                                                                                                                                           ATTORNEY AGENT INFORMATION:
NAME: Misrock, S. Leslie
REGISTRATION NUMBER: 18,872
REFERENCE/DOCKET NUMBER: 5624-161-999
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE/DOCKET NUMBER: 5624-161-999 FELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQUENCES: 12
CORRESPONDENCE ADDRESS:
ADDRESSEE: Pennie & Edmonds
STREET: 1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: US 07/668,648 FILING DATE: 13-MAR-1991 ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: US/08/429,998
FILING DATE: 27-APR-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                118 KKAPAHLSLLDLGAVEGDV 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 EKAPAHLSLPDPQALKRDV 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME: Misrock, S. Leslie
REGISTRATION NUMBER: 18,872
                                                                                                                                                                                                                                                                                                          TELEPHONE: (212)790-9090
TELEFAX: (212) 869-9741
INFORMATION FOR SEQ. ID NO: 8:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                           LENGTH: 179 amino acids TYPE: AMINO ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Local Similarity 63.2
Matches 12; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                             , MOLECULE TYPE: protein US-07-668-648-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STREET: 1125
CITY: New York
STATE: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                 TOPOLOGY: linear
                                                                                                                                                                             FILING DATE: 19
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10036
                      10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-08-429-998-8
    COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
```

Search completed: July 8, 2003, 16:30:20 Job time: 12.6923 secs

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Serrero, Ginette
TITLE OF INTENTION: 86 KDA TUORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE REFERENCE: 29996.488 ABOPO01-A
CURRENT APPLICATION NUMBER: US/08/991,862
CURRENT FILING DATE: 1998-08-17
EARLIER APPLICATION NUMBER: 08/863,862
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
Gregory D. EPITHELINS: NOVEL CYSTEINE-RICH GROWTH MODULATING PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 50; DB 4; Length 589;
Pred. No. 3.1;
1; Mismatches 6; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 179;
                                                                                                                                                                                                                                   MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC Compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
FILLING DATE: 19910403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 53; DB 5;
Pred. No. 0.25;
                                                                                              E: Bristol-Myers Squibb Company 3005 First Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; TYPE: PRT
; ORGANISM: Mouse epithelin/granulin
US-08-991-862-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 2, Application US/08991862
Patent No. 6309826
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 EKAPAHLSLPDPQALKRDV 19
                                                                                                                                                                                                                                                                                                                                                                                  ATTORNEY AGENT INFORMATION:
NAME: POOL, Brian W.
REGISTRATION NUMBER: 32,928
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELECOMMUNICATION INFORMATION TELEPHONE: (206)728-4800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ouery Match 54.1%;
Best Local Similarity 63.2%;
Matches 12; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ouery Match 51.0%;
Best Local Similarity 61.1%;
Matches 11; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 INFORMATION FOR SEQ ID NO: 8: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       : 179 amino acids
AMINO ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; MOLECULE TYPE: protein PCT-US91-02321-8
                                                                                                                                                                                                                 OMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                        NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
ADDRESSEE: Bristol-M
                                                                                                                                    CITY: Seattle
STATE: Washington
COUNTRY: USA
ZIP: 98121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NUMBER OF SEQ ID NOS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                linear
                    TILE OF INVENTION
                                                                                                                                                                                                                                                                                                                                                                        CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQ ID NO 2
LENGTH: 589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 15
US-08-991-862-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     å
```

ö

Gaps

; 0

g

1 EKAPAHLSLPDPQALKRD 18

# GenCore version 5.1.6 Copyright (c) 1993 - 2003 Compugen Ltd.

OM protein - protein search, using sw model

July 8, 2003, 16:24:26; Search time 18.5128 Seconds (without alignments) 119.483 Million cell updates/sec Run on:

US-09-824-647-6 98 Perfect score:

1 EKAPAHLSLPDPQALKRDV 19 Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

445758 seqs, 116419773 residues Searched: Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Database :

/ptodata/2/pubpaa/US07 Published\_Applications\_AA: /cgn2\_6/

/cgn2\_6/ptodata/2/pubpaa/US10\_NEW\_PUB.pep. /cgn2\_6/ptodata/2/pubpaa/US10\_PUBCOMB.pep. /cgn2\_6/ptodata/2/pubpaa/US60\_NEW\_PUB.pep. /cgn2\_6/ptodata/2/pubpaa/US60\_PUBCOMB.pep ptodata/2/pubpaa/US08\_NEW\_PUB.pep: ptodata/2/pubpaa/US08\_PUBCOMB.pep: ptodata/2/pubpaa/US09\_NEW\_PUB.pep: 'pubpaa/US07\_PUBCOMB.pep 'ptodata/2/pubpaa/US09\_PUBCOMB

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

Description	Sequence 6, Appli	Sequence 17, Appl	Sequence 1416, Ap	Sequence 2, Appli	à	Sequence 2, Appli	Sequence 2, Appli	Sequence 2, Appl1	Sequence 51, Appl	Sequence 4, Appli	Sequence 27, Appl								
						•			-										
<b>a</b>	US-09-824-647-6	US-10-218-509-6	US-10-281-160-6	US-09-813-156-6	US-09-824-807-6	US-09-824-647-17	US-10-218-509-17	US-10-281-160-17	US-09-813-156-17	US-09-824-807-17	US-09-925-301-1416	US-09-824-647-2	US-10-218-509-2	US-10-281-160-2	US-09-813-156-2	US-09-824-807-2	US-09-364-847-51	US-10-208-948-4	US-10-208-948-27
89	6	6	6	10	10	6	6	6	10	10	10	0	σ	0	10	10	6	6	6
% Query Match Length DB	19	19	19	19	19	593	593	593	593	593	621.	589	589	589	589	589	712	2115	2150
% Query Match	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	51.0	51.0	51.0	51.0	51.0	49.0	46.9	46.9
Score	86	86	86	86	86	96	96	86	86	96	96	20	50	50	20	20	48	46	. 46
Result No.	1	~	٣	4	S	9	7	æ	5	10	11	12	13	14	15	16	17	18	19

Sequence 34773, A Sequence 3, Applil Sequence 5211, Application of the Sequence 5212, Application of the Sequence 62, Application of the Sequence 62, Application of the Sequence 2283, Application of the Sequence 12577, A Sequence 12577, A Sequence 12577, A Sequence 3, Application of the Sequence 4, Application of the Sequence 4, Application of the Sequence
10 US-09-864-761-34773 9 US-09-824-647-3 9 US-10-281-160-3 10 US-09-813-156-3 10 US-09-813-156-3 10 US-09-813-156-3 10 US-09-813-156-3 10 US-09-813-156-3 10 US-09-812-242-2 9 US-09-972-268-22 9 US-10-128-714-8343 9 US-10-128-714-8343 9 US-10-128-714-8343 9 US-10-128-714-8343 9 US-10-128-714-8343 9 US-10-156-761-9575 0 US-10-156-761-9575 0 US-09-864-761-3557 0 US-09-864-761-3556 10 US-09-864-761-33516 10 US-09-864-761-33516 10 US-09-864-761-33516 10 US-09-864-761-33516 10 US-09-864-761-33516 10 US-09-864-761-33516 10 US-09-864-761-33516 10 US-09-864-761-33516
59 119 119 119 119 119 120 120 120 120 120 120 120 120 120 120
6.00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2

## ALIGNMENTS

```
Gaps
                                            LOCATION: (1)..(19)
OTHER INFORMATION: Internal peptide of human GP88 used to develop
OTHER INFORMATION: neutralizing anti-human GP88 monoclonal antibody
                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
100.0%; Score 98; DB 9; Length 19;
Best Local Similarity 100.0%; Pred. No. 7.8e-09;
Matches 19; Conservative 0; Mismatches 0; Indels
Sequence 6, Application US/09824647
Publication No. US20020183270A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                   ORGANISM: Human granulin
                                                                                                                                                                                                                                                                                                               NAME/KEY: PEPTIDE LOCATION: (1)..(19
                                                                                                                                                                                                                                                                                                                                                                                    US-09-824-647-6
                                                                                                                                                                                                                    SOFTWARE: I
                                                                                                                                                                                                                                                                      TYPE: PRT
```

EKAPAHLSLPDPQALKRDV 19 g

1 EKAPAHLSLPDPQALKRDV 19

ö

Sequence 6, Application US/10218509 Publication No. US20030092661A1 GENERAL INFORMATION: APPLICANT: Serrero, Ginette RESULT 2 US-10-218-509-6

us-09-824-647-6.rapb

```
CURRENT APPLICATION NUMBER: US/09/813,156
CURRENT FILING DATE: 2001-03-21
PRIOR PILING DATE: 1997-12-16
PRIOR FILING DATE: 1997-12-16
PRIOR FILING DATE: 1997-02-3
NUMBER OF SEQ ID NOS: 17
  FILE REFERENCE: Z9996.488/P001-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME/KEY: PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 6
US-09-824-647-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-824-807-6
                                                                                                                                                                               SOFTWARE: Pa
SEQ ID NO 6
LENGTH: 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LENGIH: 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQ ID NO 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                      TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           : LOCATION: (1)..(19)
; OTHER INFORMATION: Internal peptide of human GP88 used to develop
; OTHER INFORMATION: neutralizing anti-human GP88 monoclonal antibody.
US-10-281-160-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Serrero, Ginette
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE REFERENCE: 29996.488/P001.A
CURRENT APPLICATION NUMBER: US/10/281,160
CURRENT FILING DATE: 2002-10-28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 6, Application US/09813156
Patent No. US20020061859A1
GENERAL INFORMATION:
PAPLICANT: Serreto, Ginette
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS FILE REFERENCE: 29996.488/P001.A
CURRENT APPLICATION NUMBER: US/10/218,509
CURRENT FILING DATE: 2002-08-15
                                                                                                                                                                                                                                                                                                                                                                   LOCATION: (1)..(19)
OTHER INFORMATION: Internal peptide of human GP88 used to develop
OTHER INFORMATION: neutralizing anti-human GP88 monoclonal antibody
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100.0%; Score 98; DB 9; I
illarity 100.0%; Pred. No. 7.8e-09;
Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100.0%; Score 98; DB 9; 100.0%; Pred. No. 7.8e-09;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION NUMBER: US/08/991,862
                                                                                     PRIOR APPLICATION NUMBER: 08/991,862
PRIOR FILING DATE: 1998-08-17
PRIOR APPLICATION NUMBER: 08/863,862
PRIOR FILING DATE: 1997-05-23
WUMBER OF SEQ ID NOS: 17
SOFTWARE: Patentin Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR FILING DATE: 1998-08-17
PRIOR APPLICATION NUMBER: 08/863,862
PRIOR FILING DATE: 1997-05-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 6, Application US/10281160 Publication No. US20030108950A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EKAPAHLSLPDPQALKRDV 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 EKAPAHLSLPDPQALKRDV 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EKAPAHLSLPDPQALKRDV 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 EKAPAHLSLPDPQALKRDV 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQ ID NOS: 17
SOFTWARE: PatentIn Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity 100. Matches 19; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM: Human granulin
                                                                                                                                                                                                                                                                                                ORGANISM: Human granulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
Matches 19; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY: PEPTIDE LOCATION: (1)..(1)
                                                                                                                                                                                                                                                                                                                                                  NAME/KEY: PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-813-156-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-10-281-160-6
                                                                                                                                                                                                                                                                                                                                                                                                                                     US-10-218-509-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQ ID NO 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                         SOFTWARE: 1
                                                                                                                                                                                                                                                                                PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
```

```
Gaps
                                                                                                                                                       : LOCATION: (1)..(19)
; OTHER INFORMATION: Internal peptide of human GP88 used to develop
; OTHER INFORMATION: neutralizing anti-human GP88 monoclonal antibody.
US-09-813-156-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LOCATION: (1)...(19)
OTHER INFORMATION: Internal peptide of human GP88 used to develop
OTHER INFORMATION: neutralizing anti-human GP88 monoclonal antibody.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Serrero, Ginette
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE REPERENCE: 2996.488/P001-A
CURRENT APPLICATION NUMBER: U5/09/824,807
CURRENT FILING DATE: 2001-04-04
PRIOR APPLICATION NUMBER: 08/991,862
PRIOR FILING DATE: 1997-12-16
PRIOR APPLICATION NUMBER: 08/863,862
PRIOR APPLICATION NUMBER: 08/863,862
PRIOR FILING DATE: 1997-05-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS FILE REFERENCE: 29996,488/P001-A
                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 19;
                                                                                                                                                                                                                                                                                                                Length 19;
                                                                                                                                                                                                                                                                                                              100.0%; Score 98; DB 10; 100.0%; Pred. No. 7.8e-09;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100.0%; Score 98; DB 10; 100.0%; Pred. No. 7.8e-09;
                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 17, Application US/09824647
Publication No. US20020183270A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 6, Application US/09824807
Patent No. US20020094966A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 EKAPAHLSLPDPQALKRDV 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 EKAPAHLSLPDPQALKRDV 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 EKAPAHLSLPDPQALKRDV 19
                                                                                                                                                                                                                                                                                                                                                                                                                      1 EKAPAHLSLPDPQALKRDV 19
                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Serrero, Ginette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQ ID NOS: 17 SOFTWARE: Patentin Ver. 2.0
                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity 100.0
Matches 19; Conservative
Patentin Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Local Similarity 100.
Matches 19; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: PRT
ORGANISM: Human granulin
                                                                                                  ORGANISM: Human granulin
```

Gaps

ö

Length 593; Indels

Score 98; DB 9; Pred. No. 3.8e-07;

Mismatches

ö

```
346 EKAPAHLSLPDPQALKRDV 364
                                                                                                                                                    1 EKAPAHLSLPDPQALKRDV 19
                                                            Query Match 100.0%;
Best Local Similarity 100.0%;
Matches 19; Conservative 0
; ORGANISM: Human GP88 cDNA
US-10-281-160-17
                                                                                                                                                                                                                                                                               US-09-813-156-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                        õ
                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 17, Application US/10218509
Fublication No. US20030092661A1
GENERAL INFORMATION:
APPLICANT: Serrero, Ginette
TILE REFERENCE: 29996.488/P001-A
CURRENT APPLICANTION NUMBER: US/10/218,509
CURRENT APPLICATION NUMBER: US/10/218,509
CURRENT APPLICATION NUMBER: US/10/218,509
FILM APPLICATION NUMBER: US/10/218,509
FRIOR FILING DATE: 1998-08-17
FRIOR FILING DATE: 1998-08-17
FRIOR FILING DATE: 1998-08-17
FRIOR FILING DATE: 1997-05-23
NUMBER OF SEQ ID NOS: 17
SEQ ID NO 17
LENGTH: 593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                     0; · Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 17, Application US/10281160
Publication No. US20030108950al
GENERAL INFORMATION:
APPLICANT: Serrero, Ginette
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE REFREENCE: 29996.488/P001-A
CURRENT APPLICATION NUMBER: US/10/281,160
CURRENT PILING DATE: 2002-10-28
PRIOR APPLICATION NUMBER: US/08/991,862
PRIOR FILING DATE: 1998-08-17
PRIOR FILING DATE: 1998-08-17
PRIOR FILING DATE: 1997-05-23
                 CURRENT FILING DATE: 2001-04-04
PRIOR APPLICATION NUMBER: 68/991,862
PRIOR FILING DATE: EARLIER APPLICATION NUMBER: 08/991,862
PRIOR FILING DATE: EARLIER FILING DATE: 1998-08-17
PRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER: 08/863,862
PRIOR FILING DATE: EARLIER FILING DATE: 1997-05-23
NUMBER OF SEQ ID NOS: 17
SOFTWARE: PATENTIN Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 593;
                                                                                                                                                                                                                                                                                                          Length 593;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                     0; Indels
                                                                                                                                                                                                                                                                                                          Score 98; DB 9; I Pred. No. 3.8e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0; Mismatches
                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 98;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 346 EKAPAHLSLPDPQALKRDV 364
                                                                                                                                                                                                                                                                                                                                                                                                                    346 EKAPAHLSLPDPQALKRDV 364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 EKAPAHLSLPDPQALKRDV 19
                                                                                                                                                                                                                                                                                                        Query Match 100.0%; S
Best Local Similarity 100.0%; P.
Matches 19; Conservative 0;
                                                                                                                                                                                                                                                                                                                                                                                             1 EKAPAHLSLPDPQALKRDV 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 100.0%;
Best Local Similarity 100.0%;
Matches 19; Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; ORGANISM: Human GP88 cDNA US-10-218-509-17
                                                                                                                                                                                                                   ; TYPE: PRT
; ORGANISM: Human GP88 cDNA
US-09-824-647-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-10-281-160-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-10-218-509-17
                                                                                                                                                                          SEQ ID NO 17
LENGTH: 593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NUMBER OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                               å
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: SETTECO, GINETLE
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTACONISTS
TITLE REPERENCE: 29996.488/P001-A
CURRENT APPLICATION NUMBER: US/09/824,807
CURRENT FILING DATE: 2001-04-04
PRIOR PELING DATE: 1997-12-16
PRIOR FILING DATE: 1997-12-16
PRIOR PILING DATE: 08/981,862
                                                     APPLICANT: Serrero, Ginette
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE REFERENCE: 2996.488/P001-A
CURRENT APPLICATION NUMBER: US/99/813,156
CURRENT FILING DATE: 2001-03-21
PRIOR APPLICATION NUMBER: 08/991,862
PRIOR FILING DATE: 1997-12-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 593;
                                                                                                                                                                                                                                                                                                                                                                                                              Length 593;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 98; DB 10;
Pred. No. 3.8e-07;
                                                                                                                                                                                                                                                                                                                                                                                                              Score 98; DB 10;
Pred. No. 3.8e-07;
; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0; Mismatches
                                                                                                                                                                                                         PRIOR APPLICATION NUMBER: 08/863,862 PRIOR FILING DATE: 1997-05-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 17, Application US/09824807
Patent No. US20020094966A1
GENERAL INFORMATION:
Sequence 17, Application US/09813156
Patent No. US20020061859A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       346 EKAPAHLSLPDPQALKRDV 364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        346 EKAPAHLSLPDPQALKRDV 364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 EKAPAHLSLPDPQALKRDV 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 EKAPAHLSLPDPQALKRDV 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR FILING DATE: 1997-05-23
NUMBER OF SEQ ID NOS: 17
SOFTWARE: PatentIn Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity luv..
Anna 19; Conservative
                                                                                                                                                                                                                                               NUMBER OF SEQ ID NOS: 17
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 17
LENGTH: 593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; SEQ ID NO 17
; LENGTH: 593
; TYPE: PRT
; ORGANISM: Human GP88 CDNA
US-09-824-807-17
                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local Similarity 100.
Matches 19; Conservative
                                                                                                                                                                                                                                                                                                                                                        Human GP88 cDNA
                                          GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-824-807-17
                                                                                                                                                                                                                                                                                                                                                                          US-09-813-156-17
```

```
589
                                                                                                                                                                                                                                                                                                                                                                                      US-10-281-160-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-813-156-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: PRT
                                                                                  LENGTH:
                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: SETECO., Ginette
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE REFERENCE: 299964.488/P001-A
CURRENT APPLICATION NUMBER: US/09/824,647
PRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER: 08/991,862
PRIOR FILING DATE: EARLIER FILING DATE: 1998-08-17
PRIOR FILING DATE: EARLIER FILING DATE: 1998-08-17
PRIOR FILING DATE: EARLIER FILING DATE: 1998-08-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Serrero, Ginette
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE REFERENCE: 29966.488/POID.A
CURRENT APPLICATION NUMBER: US/10/218,509
CURRENT FILING DATE: 2002-08-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                           Length 621;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 589
                             GENERAL INFORMATION:
APPLICANT: Rosen et al.
TITLE OF INVENTION: Nucleic Acids, Proteins and Antibodies
FILE REFERENCE: PA106
CURRENT APPLICATION NUMBER: US/09/925,301
CURRENT FILING DATE: 2001-08-10
PRIOR APPLICATION NUMBER: PCT/US00/05882
PRIOR APPLICATION NUMBER: 60/124,270
                                                                                                                                                                                                                                                                                                                                                                                                                  4e-07; 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                         Score 98;
Pred. No. 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 50;
Pred. No.
Sequence 1416, Application US/09925301
Patent No. US20020052308A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; TYPE: PRT
; ORGANISM: Mouse epithelin/granulin
US-09-824-647-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              374 EKAPAHLSLPDPQALKRDV 392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 2, Application US/09824647
Publication No. US20020183270A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 2, Application US/10218509
Publication No. US20030092661A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               :| | | |||||| || || || 344' KKVIAPLRLPDPQILKSD 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 EKAPAHLSLPDPQALKRDV 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 EKAPAHLSLPDPQALKRD 18
                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 100.0%;
Best Local Similarity 100.0%;
Matches 19; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ch 51.0%;
il Similarity 61.1%;
11; Conservative
                                                                                                                                                                                                                    PRIOR FILING DATE: 1999-03-12
NUMBER OF SEQ ID NOS: 1694
SOFTWARE: PatentIn Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQ ID NOS: 17
SOFTWARE: Patentin Ver. 2.0
                                                                                                                                                                                                                                                                                                                                            ; ORGANISM: Homo sapiens
US-09-925-301-1416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                 SEQ ID NO 1416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LENGTH: 589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOFTWARE: PE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
```

```
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Serrero, Ginette
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE REFERENCE: 29996.488/P001-A
CURRENT APPLICATION NUMBER: U5/10/281,160
CURRENT FILING DATE: 2002-10-28
PRIOR APPLICATION UNGHER: U5/08/991,862
PRIOR PLIING DATE: 1999-08-17
PRIOR PLIING DATE: 1999-08-17
PRIOR FILING DATE: 1997-05-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Serrero, Ginette
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGORISTS
FILE REFERENCE: Z9996.488/F001-A
CURRENT APPLICATION NUMBER: US/09/813,156
CURRENT FILING DATE: 2001-03-21
                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                    Length 589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 589;
                                                                                                                                                                                                                                                                                                                    6; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 50; DB 9;
Pred. No. 10;
1; Mismatches
                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                           Score 50;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION UNDERR: 08/991,862
PRIOR FILING DATE: 1997-12-16
PRIOR FILING DATE: 1997-12-16
PRIOR FILING DATE: 1997-05-23
NUMBER OF SEQ ID NOS: 17
SOFTWARE: Patentin Ver. 2.0
LENGTH: 589
PRIOR APPLICATION NUMBER: 08/991,862
PRIOR FILING DATE: 1998-08-17
PRIOR APPLICATION NUMBER: 08/863,862
PRIOR FILING DATE: 1997-05-23
NUMBER OF SEO ID NOS: 17
SOFTWARE: Patentin Ver: 2.0
                                                                                                                                                                              TYPE: PRT , ORGANISM: Mouse epithelin/granulin US-10-218-509-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .. ORGANISM: Mouse epithelin/granulin
US-10-281-160-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM: Mouse epithelin/granulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 2, Application US/10281160 Publication No. US20030108950A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 2, Application US/09813156
Patent No. US20020061859Al
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                        344 KKVIAPLRLPDPQILKSD 361
                                                                                                                                                                                                                                                                                                                                                              1 EKAPAHLSLPDPQALKRD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 EKAPAHLSLPDPQALKRD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       51.0%;
ilarity 61.1%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQ ID NOS: 17
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 2
LENGTH: 589
                                                                                                                                                                                                                                                                    Query Match (51.0)
Best Local Similarity (51.1)
Matches 11; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
Matches 11; Conserv
```

	Gaps
	ö
Length 589;	Indels
10;	9
Score 50; DB 1	ches
50;	smat
ore	Mismatche
Š.	1:1
51.0%;	ative
Query Match 51.08;	Conserv
cch 1 sim	11;
y Mat	hes
Quer	Matc

; 0

> Oy 1 EKAPAHLSLPDPOALKRD 18 :| | | | | | | | | | | Db 344 KKVIAPLRLPDPQILKSD 361 .

Search completed: July 8, 2003, 16:31:42 Job time: 19.5128 secs

GenCore version 5.1.6 Copyright (c) 1993 - 2003 Compugen Ltd.

- protein search, using sw model OM protein July 8, 2003, 16:19:45; Search time 19.2436 Seconds (without alignments) 94.918 Million cell updates/sec Run on:

US-09-824-647-6 98 1 EKAPAHLSLPDPQALKRDV 19

Title: Perfect score:

Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

283224 seqs, 96134422 residues Searched:

283224 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Database :

PIR\_73:\* 1: pir1:\* 2: pir2:\* 3: pir3:\* 4: pir4:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Description	granulin precursor	epithelin/granulin	hypothetical prote	hypothetical prote	hypothetical prote		hypothetical prote		ribonuclease PH (r	protein F12A21.5 [	epithelin/granulin	phosphate acetyltr	hypothetical prote	septum site-determ	hypothetical prote	murein hydrolase [	PRR2 alpha - human	bacteriophage N4 a	secretion protein	probable 2,3-dehyd	hypothetical prote	probable calcium c	hypothetical prote	cysteine synthase	beta-arrestin 2 -	early ElB 49K prot	_	early transcriptio	early transcriptio
•						-				٠									-							,			
																		•											
•	:						i																						
OI.	GYHU	B38128	T50513	696595	S76322	I50372	H72559	T22911	H90221	н96700	C38128	675563	F82984	AH2237	C98263	AG3021	153960	B49351	B83053	<b>T46668</b>	T20892	T18770	.T00051	<b>S64303</b>	A59279	<b>ERADC2</b>	G87414	C43497	142517
DB	-	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	ņ	7	Ŋ	7	7	7	H	7	1	П
Length	593	589	1857	2143	37.4	260	187	223	248	464	589	722	619	366	406	406	478	990	129	488	701	1148	1956	393	410	438	258	710	710
% Query Match	100.0	64.3	6.94	46.9	45.9	45.4	44.9	44.9	44.9	44.9	44.9	44.9	44.4	43.9	43.9	43.9	43.9	43.9	42.9	42.9	42.9	42.9	42,9	41.8	41.8	41.8	41.8	41.8	41.8
Score	86	63	46	46	45	44.5	44	44	44	44	44	44	43.5	43	43	43	43	43	42	42	42	42	42	41	41	41	41	41	41
Result No.	1	7	m	4	S	ُو		80	6	10	11	12	.13	14	15	16	17	18	19	50	21	22	23	24	25	56	27	28	59

Citalizacent wired	to the state of th	ANL protein - vari	hypothetical prote	VETF, 82K subunit	probable transport	SEC15 protein - ye	plasmid replicatio	ribulbse bisphosph	hypothetical prote	hypothetical prote	hypothetical prote	hypothetical 10.4	cardiotrophin-1 -	cardiotrophin-1 -	hypothetical prote	DNA-3-methyladenin	
0703611	0.000	E72164	T28549	T37394	G02500	S07838	T08312	C96695	<b>S</b> 66705	A97468	AD2686	B64982	I49153	JC4645	<b>S69835</b>	DGECMA	
-	4 (	~	~	7	~	0	-	~	~	7	~	~	7	7	7	-	
,	7.1	710	710	710	745	910	1128	2149	408	95	95	96	203	203	278	282	
	0.14	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.3	40.8	. 40.8	40.8	40.8	40.8	40.8	40.8	
	4	41	41	41	41	41	41.	41	40.5	40	40	40	40	40	40	40	

## ALIGNMENTS

RESULT 1

A; Molecule type: mRNA

A; Residues: 1-593 <PLO>

A;Cross-references: GB:X62320; NID:931192; PIDN:CAA44196.1; PID:931193
R;Bhandari, V.; Palfree, R.G.E.; Bateman, A.
Proc. Natl. Acad. Sci. 0.S.A. 89, 1715-1719, 1992
A;Title: Isolation and sequence of the granulin precursor cDNA from human bone mathematics and sequence of the granulin precursor cDNA from human bone mathematics and sequence of the granulin precursor cDNA from human bone mathematics and sequence of the granulin precursor cDNA from human bone mathematics and sequence of the granulin precursor cDNA from human bone mathematics and sequence of the granulin precursor cDNA from human bone mathematics and sequence of the granulin precursor cDNA from human bone mathematics and sequence of the granulin precursor cDNA from human bone mathematics and sequence of the granulin precursor cDNA from human bone mathematics and sequence of the granulin precursor cDNA from human bone mathematics and sequence of the granulin precursor cDNA from human bone mathematics and sequence of the granulin precursor cDNA from human bone mathematics and sequence of the granulin precursor cDNA from human bone mathematics and sequence of the granulin precursor cDNA from human bone mathematics and sequence of the granulin precursor cDNA from human bone mathematics and sequence of the granulin precursor cDNA from human bone mathematics and sequence of the granulin precursor cDNA from human prec

A; Accession: A38118

A; Molecule type: mRNA A; Residues: 1-406, 'R', 408-433, 'G', 435-453, 'G', 455-459, 'Q', 461-546, 'A', 548-566, 'R' A; Residues: 1-406, 'R', 408-433, 'G', 435-453, 'G', 455-459, 'Q', 461-546, 'A', 548-566, 'R' A; Cross-references: GB:M5161; NID:g183612; PIDN:AAA58617.1; PID:g183613 A; Note: this sequence has been revised in reference JC1284 B; Bateman, A.; Belcourt, D.; Bennett, H.; Lazure, C.; Solomon, S. Biochem: Blophys. Res. Commun. 173, 1161-1168, 1990 A; Title: Granulins, a novel class of peptide from leukocytes. A; Reference number: A36698; MUID:91097544; PMID:2268320

Molecule type: protein; Residues: 281-336 <BAT>

Note: this protein was purified and characterized as granulin Accession: B36698

A;Molecule type: protein A;Residues: 206-218,'H',220-233 <BA2> A;Note: this protein was purified and characterized as granulin A;Accession: C36698

A;Molecule type: protein A;Residues: 364-367, 'X', 369-385,'H', 387-396 <BA3> A;Note: this protein was purified and characterized as granulin C A;Accession: D36698

A;Molecule type: protein A;Residues: 442-446,'XDTSS',456-458,'DG' <BA4>

Gaps

ö

```
Ritheologis, A.; Ecker, J.R.; Palm, C.J.; Federspiel, N.A.; Kaul, S.; White, O.; Al Chin, C.W.; Chung, M.K.; Conn, L.; Conway, A.B.; Conway, A.R.; Creasy, T.H.; Dewar ansen, N.F.; Hughes, B.; Huizar, L.
Nature 408, 1816-820, 2000
A; Authoris: Hunter, J.L.; Jenkins, J.; Johnson-Hopson, C.; Khan, S.; Khaykin, E.; Ki C.A.; Li, J.H.; Li, Y.; Lin, X.; Liu, S.X.; Liu, Z.A.; Luros, J.S.; Maitt, R.; Marz Rizzo, M.; Rooney, T.; Rowley, D.; Sakano, H.
A;Authors: Salzberg, S.L.; Schwartz, J.R.; Shinn, P.; Southwick, A.M.; Sun, H.; Tal A;Attle: Sequence and analysis of chromosome 1 of the plant Arabidopsis.
A;Reference number: A86141; MUID:21016719; PMID:11130712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 550/3; 567/1; 721/3; 766/3; 801/3; 839/3; 865/2; 892/3; 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              R;Choisne, N.; Robert, C.; Brottier, P.; Wincker, P.; Cattolico, L.; Artiguenave, submitted to the Protein\Sequence Database, May 2000
A;Reference number: 225102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Cross-references: GB: AE005173; NID: 910645420; PIDN: AAG21537.1; GSPDB: GN00141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              hypothetical protein F7A10.23 [imported] - Arabidopsis thaliana
C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Date: 02-Mar-2001 #sequence_revision 02-Mar-2001 #text_change 31-Mar-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     hypothetical protein T27115_10 - Arabidopsis thaliana
C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Date: 21-Jul-2000, #sequence_revision 21-Jul-2000 #text_change 21-Jul-2000
                                                                                                  A; Residues: 1-200,'S', 203-388,'M',390-589 <RES>
A;Cross-references: GB:M97750; NID:g204223; PIDN:AAA16903.1; PID:g204224
C;Superfamily: granulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 1857;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 2143;
                                                                                                                                                                                                                                 Length 589;
                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Cross-references: EMBL:AL358732
A;Experimental source: cultivar Columbia; BAC clone T27115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ore 46; DB 2;
ed. No. 83;
Mismatches 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 2;
97;
                                            A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
                                                                                                                                                                                                                              Score 63; DB 2;
Pred. No. 0.044;
                                                                                                                                                                                                                                                                                             1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 46;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 46;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                      344 KKŸTASLSLPDPQILKNDV 362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      :|||| : | | :||
1336 EAPAHPAPPAPPLRRD 1352
                                                                                                                                                                                                                                                                                                                                                          1 EKAPAHLSLPDPQALKRDV 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2 KAPAHLSLPDPQALKRD 18
                                                                                                                                                                                                                              Match 64.3%;
Local Similarity 68.4%;
les 13; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          46.9%;
ilarity 52.9%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            46.9%;
61.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Map position: 3
A; Introns: 295/1; 320/1;
A; Note: T27115_10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Molecule type: DNA
A; Residues: 1-2143 <STO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Residues: 1-1857 <CHO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
Matches 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Status: preliminary
A; Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C; Accession: T50513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C; Accession: G96595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Accession: G96595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Accession: T50513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Map position: 1
                                                                                                                                                                                                                                 Query Match
Best Local S
Matches 13
                         A; Accession:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         epithelin/granulin precursor - rat
C;Species: Rattus norvegicus (Norway rat)
C;Date: 10-Jul-1992 #sequence_revision 10-Jul-1992 #text_change 20-Aug-1999
C;Accession: B38128; A36199; B36199; B36598; I53272
R;Plowman, G.D.; Green, J.M.; Neubauer, M.G.; Buckley, S.D.; McDonald, V.L.; Todaro, G.J.
A; Biol. Chem. 267, 13073-13078, 1992
A;Title: The epithelin precursor encodes two proteins with opposing activities on epithe
A;Reference number: A38128; MUID:92317004; PMID:1618805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Cross-references: GB:X62322; NID:g56108; PIDN:CAA44198.1; PID:g56109
Shoyab, M.; McDonald, V.L.; Byles, C.; Todaro, G.J.; Plowman, G.D.
roc. Natl. Acad. Sci. U.S.A. 87, 7912-7916, 1990
Title: Epithelins 1 and 2: isolation and characterization of two cysteine-rich growth-Reference number: A36199; MUID:91045907; PMID:2236009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         tle: The complementary deoxyribonucleic acid sequence, tissue distribution, and cell
eference number: 153272; MUID:94062640; PMID:8243292
                                                                                                                                                                                                                                                                                                                                                                                A; Map position: 17pter-17qter
A;Introns: 46/3; 88/3; 117/1; 154/3; 200/1; 236/3; 279/1; 311/3; 393/3; 471/3; 548/3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                  Br. J. Cancer 67, 686-692, 1993
A;Title: Characterisation of UGP and its relationship with beta-core fragment.
A;Reference number: A56873; MUID:93229246; PMID:8471426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (covalent) #status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŝ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 593;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bateman, A.; Belcourt, D.; Bennett, H.; Lazure, C.; Solomon,
Ragshawe, K.D.; Coles, B.; Read, D.; Taylor, M., 686-692, 1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Blochem. Biophys. Res. Commun. 173, 1161-1168, 1990
A:Title: Granulins, a novel class of peptide from leukocytes.
A:Reference number: A36698; MUID:91097544; PMID:2268320
                                                                                                                                                                 A; Molecule type: protein
A; Residues: 281-283, "X, "1, 285-289, 'S', 291-295 <KAR>
A; Experimental source: urine
A; Note: sequence extracted from NCBI backbone (NCBIP:129524)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              F;123-179/Product: granulin F *status predicted <GRF>
F;206-26J/Product: granulin B *status experimental <GRB>
F;213-336/Product: granulin A *status experimental <GRA>
F;364-313/Product: granulin C *status experimental <GRA>
F;442-496/Product: granulin D *status predicted <GRD>
F;518-573/Product: granulin E *status predicted <GRD>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        :1-17/Domain: signal sequence #status predicted <SIG>
:18-593/Product: granulin #status predicted <MAT>
:18-593/Product: progranulin #status predicted <PRO>
:18-44/Product: paragranulin #status experimental <PGR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ed. No. 1.1e-07;
Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            'SB', 310-324, 'T', 326, 'X', 328, 'Q'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    F;58-113/Product: granulin G #status predicted <GRG>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 98;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                          A;Cross-references: GDB:136006; OMIM:138945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                F;368/Binding site: carbohydrate (Asn)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Molecule type: protein
A; Residues: 279-307, 'SB', 310-324, 'T', 3
R; Bhandari, V.; Giaid, A.; Bateman, A.
Endocrinology 133, 2682-2689, 1993
A; Title: The complementary decoxyrbonu
A; Reference number: IS3272; MUID:94062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 EKAPAHLSLPDPQALKRDV 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100.08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100.08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Keywords: glycoprotein; tandem
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Molecule type: protein
Residues: 280-300 <SHO>
Accession: B36199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Molecule type: protein
Residues: 205-226 <SH2>
                      Bagshawe,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
Matches 19; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                   C; Superfamily: granulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Molecule type: mRNA
Residues: 1-589 <PLO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Accession: A36199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Accession: E36698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Accession: B38128
                                                                                                                                                                                                                                                                                          C;Genetics:
A;Gene: GDB:GRN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
```

ö

Gaps

ö

Indels

```
A; Cross-references: DDBJ:AP000062; NID:g5105244; PIDN:BAA80765.1; PID:d1044551; f A; Experimental source: strain K1
A; Genetics:
A; Genetics: APE1762
C; Superfamily: Aeropyrum pernix hypothetical protein APE1762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C;Accession: #90221
R;She, Q.; Singh, R.K.; Confalonieri, F.; Zivanovic, Y.; Allard, G.; Awayez, M.;
Jong, I.; Jeffries, A.C.; Kozera, C.J.; Medina, N.; Peng, X.; Thi-Ngoc, H.P.;
arrett, R.A.; Ragab, M.A.; Sensen, C.W.; Van der Oost, J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Cross-references: EMBL:281555; PIDN:CAB04512.1; GSPDB:GN00023; CESP:F58E10.6
A;Experimental source: clone F58E10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Cross-references: GB:AE006641; NID:913813903; PIDN:AAK41031.1; GSPDB:GN00155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  hypothetical protein F58E10.6 - Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Date: 15-Oct-1999 *sequence_revision 15-Oct-1999 *text_change 15-Oct-1999
C;Accession: T22911
R;McMurray, A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ribonuclease PH (rph) [imported] - Sulfolobus solfataricus
C;Species: Sulfolobus solfataricus
C;Date: 24-May-2001 #sequence_revision 24-May-2001 #text_change 15-Jun-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                               Score 44; DB 2; Length 187;
Pred. No. 13;
0; Mismatches 4; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 223;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 248;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Description: Sulfolobus solfataricus complete genome.
A; Reference number: A99139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A: Status: preliminary; translated from GB/EMBL/DDBJ
A: Molecule type: DNA
A: Residues: 1-223 <WIL>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   submitted to the EMBL Data Library, November 1996 A; Reference number: Z19637 A; Accession: F22911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 44; DB 2
Pred. No. 18;
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           14.9%; Score 44; DB Llarity 50.0%; Pred. No. 16; Conservative 4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Gene: rph
C; Superfamily: tRNA nucleotidyltransferase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               44.9%;
ilarity 56.2%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4 PAHLSLPDPQALKRDV 19
                                                                                                                                                                                                                                                  uuery Match
Best Local Similarity 71.4%;
Matches 10; Conservative
                                                                                                                                                                                                                                                                                                                                                                                           | ||| | ||| 0
90 HRSLPHPGALKRVV 103
                                                                                                                                                                                                                                                                                                                                                              6 HLSLPDPQALKRDV 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
Matches 8; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
Matches 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-248 <KUR>
                                                A; Molecule type: DNA
A: Residues: 1-187 < KAW>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Map position: 5
A; Introns: 64/3; 166/1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C;Genetics:
A;Gene: CESP:F58E10.6
                          A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Accession: H90221
Accession: H72559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        R; Kawarabayasi, Y.; Hino, Y.; Horikawa, H.; Yamazaki, S.; Haikawa, Y.; Jin-no, K.; Takahawa, H.; Takamiya, M.; Masuda, S.; Funahashi, T.; Tanaka, T.; Kudoh, Y.; Yamazaki, J.; Ranaka, E.; Radamiya, M.; Danazaki, J.; Ranaka, E.; Rudoh, Y.; Yamazaki, J.; Ranaka, E.; Rudoh, Y.; Kamazaki, J.; Rafatler. Complete genome sequence of an aerobic hyper-thermophilic Crenarchaeon, Aeropyr A; Reference number: A72450; MUID:99310339; PMID:10382966
                                                                                                                                                                                                                                                                                                                                                           R; Kaneko, T.; Sato, S.; Kotani, H.; Tanaka, A.; Asamizu, E.; Nakamura, Y.; Miyajima, N.; K.; Okumura, S.; Silmpo, S.; Takeuchi, C.; Wada, T.; Watanabe, A.; Yamada, M.; Yasuda DNA Res. 3, 109-136, 1996
BNA Res. 3, 109-136, 1996
A; Title: Sequence analysis of the genome of the unicellular cyanobacterium Synechocystis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Cross-references: EMBL:D64000; GB:AB001339; NID:g1001484; PIDN:BAA10174.1; PID:g100154
A;Note: the nucleotide sequence was submitted to the EMBL Data Library, June 1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C; Accession: I50372
R; Funahashi, J.; Sekido, R.; Murai, K.; Kamachi, Y.; Kondoh, H.
Development 119, 433-446, 1993
A; Title: Delta-crystallin enhancer binding protein delta EF1 is a zinc finger-homeodomai A; Reference number: 150222; MUID: 9411644; PMID: 7904558
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                          .Date: 25-Apr-1997 #sequence_revision 25-Apr-1997 #text_change 20-Jun-2000
Accession: S76322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C.Species: Gallus gallus (chicken)
C.bate: 13-Sep-1996 #sequence_revision 13-Sep-1996 #text_change 05-May-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C;Species: Aeropyrum pernix
C;Date: 20-Aug-1999 #sequence_revision 20-Aug-1999 #text_change 09-Jun-2000
C;Accession: H72559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Cross-references: GB:D14316; NID:q391639; PIDN:BAA03262.1; PID:q391640
C;Superfamily: CHD-1 protein; chromobox homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 560;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 374;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          hypothetical protein APE1762 - Aeropyrum pernix (strain K1)
                                                                                                                                                                                    C:Species: Synechocystis sp. (strain PCC 6803) A;Variety: PCC 6803 C;Date: 5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Reference number: S74322; MUID:97061201; PMID:8905231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      45.9%; Score 45; DB 2; 50.0%; Pred. No. 20; tive 2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-560 <FUN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         hypothetical protein 2 delta-EF1 region - chicken
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  45.4%; Score 44.5; E
55.0%; Pred. No. 38;
tive 2; Mismatches
  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | || | | |:| ||: || |
ELAPLHKSIPSDPEERKRYV 487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 EKAPAHLSLP-DPOALKRDV 19
5,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       : | || ||| :
339 RPPVHLDLPDPSKM 352
                                                                                      372 HLSITDPSAARRD 384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2 KAPAHLSLPDPQAL 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 45.49
Best Local Similarity 55.09
Matches 11; Conservative
                                                   6 HLSLPDPQALKRD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity 50.0
Matches 7; Conservative
8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Molecule type: DNA
A; Residues: 1-374 <KAN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Accession: I50372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Accession: S76322
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           å
                                                     õ
```

ö

```
....... rurillcation of an autocrine growth factor homologous with mouse epithelin A;Reference number: A46705; MUID:93266526; PMID:8496151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Molecule type: DNA
A;Residues: 1-619 <STO>
A;Cross-references: GB:AE004942; GB:AE004091; NID:99951607; PIDN:AAG08684.1; GSPDB:
                                                                                                                             A; Status: preliminary
A; Molecule type: protein
A; Molecule type: protein
A; Residues: 18-19,'X',21-25,'X',27-29,'XX',32;'XXX',119-127;152-154,'DXK',158-161,'
C; Superfamily: granulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Title: Genome sequence of the radioresistant bacterium Deinococcus radiodurans R1
A;Reference number: A75250; MUID:20036896; PMID:10567266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Cross-references: GB:AE001870; GB:AE000513; NID:g6457732; PIDN:AAF09663.1; PID:gf
A;Experimental source: strain R1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Title: Complete genome sequence of Pseudomonas aeruginosa PA01, an opportunistic A;Reference number: A82950; MUID:20437337; PMID:10984043
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        C;Accession: G75563 T. R. Reidelberg, J.F.; Hickey, E.K.; Peterson, J.D.; Dodson, M.; Shen, M.; Vamathevan, J.J.; Lam, P.; McDonald, L.; Utterback, T.; Zalewski, S.; Smith, H.O.; Venter, J.C.; Fraser, C.M. Science 286, 1571-1577, 1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            R;Stover, C.K.; Pham, X.Q.; Erwin, A.L.; Mizoguchi, S.D.; Warrener, P.; Hickey, adman, S.; Yuan, Y.: Brody, L.L.; Coulter, S.N.; Folger, K.R.; Kas, A.; Larbig, .; Lory, S.; Olson, M.V.
Nature 406, 959-964, 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        phosphate acetyltrdnsferase (EC 2.3.1.8) - Deinococcus radiodurans (strain R1)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          hypothetical protein PA5299 [imported] - Pseudomonas aeruginosa (strain PAO1)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C;Species: Pseudomonas aeruginosa
C;Date: 15-Sep-2000 *sequence_revision 15-Sep-2000 *text_change 31-Dec-2000
C;Accession: F82984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      c;Species: Deinococcus radiodurans
C;Date: 03-Dec-1999 *sequence_revision 03-Dec-1999 *text_change 09-Jun-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                           ă.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 2; Length 619;
                                                                                                                                                                                                                                                                        Length 589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 722;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 2;
60;
                                                                                                                                                                                                                                                                              ;;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 44; DB :
Pred. No. 60;
2; Mismatches
                                                                                                                                                                                                                                                                           DB
48;
                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 43.5;
Pred. No. 61;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C;Superfamily: phosphate acetyltransferase pta
C;Keywords: acyltransferase; coenzyme A
                                                                                                                                                                                                                                                                              Score 44;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                          1 EKAPAHLSLPDPQALKRD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Experimental source: strain PAO1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                44.9%;
56.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  :| |||: ||| | |
RAVAHLTTPDPIPLTR 90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2 KAPAHLSLPDPQALKR 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  44.48;
                                                                                                                                                                                                                                                                        Query Match (44.9%;
Best Local Similarity 55.6%;
Matches 10; (Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Residues: 1-722 <WHI>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    \Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Accession: G75563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Accession: F82984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Map position: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Gene: DR0073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Gene: PA5299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C;Genetics
                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                            RESULT 10

H96700

protein F12A21.5 [imported] - Arabidopsis thaliana
C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Date: 02-Mar-2001 #sequence_revision 02-Mar-2001 #text_change 31-Mar-2001
C;Accession: H96700
R;Theologis, A.; Ecker, J.R.; Palm, C.J.; Federspiel, N.A.; Kaul, S.; White, O.; Alonso, Chin, C.W.; Chung, M.K.; Conn, L.; Conway, A.B.; Conway, A.R.; Creasy, T.H.; Dewar, K.; ansen, N.F.; Hudbes, B.; Hulzar, L.
Nature 408, 816-820, 2000
A;Authors: Hunter, J.L.; Jenkins, J.; Johnson-Hopson, C.; Khan, S.; Khaykin, E.; Kim, C.C.A.; Li, J.H.; Li, Y.; Liu, S.X.; Liu, Z.A.; Luros, J.S.; Maiti, R.; Marziali, Rizzo, M.; Rooney, T.; Rowley, D.; Sakano, H.
Rizzo, M.; Rooney, T.; Rowley, D.; Sakano, H.
A;Authors: Salzberg, S.L.; Schwartz, J.R.; Shinn, P.; Southwick, A.M.; Sun, H.; Tallon, A;Authors: Salzberg, S.L.; Schwartz, J.C.; Davis, R.W.
A;Title: Sequence and analysis of chromosome 1 of the plant Arabidopsis.
A;Reference number: A66141; MUID:21016719; PMID:11130712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Wolecule type: DNA
A; Residues: 18-349, L',351-589 < BAB>
A; Residues: 18-349, L',351-589 < BAB>
R; Baba, T.; Hoff, H.B.

Mol. Reprod. Dev. 34, 233-243, 1993
A; Title: Acrogramin, an acrosomal cysteine-rich glycoprotein, is the precusor of the grd
A; Reference number: 148141; MUID:93228994; PMID:8471244
A; Accession: 149468
A; Status: preliminary; translated from GB/EMBL/DDBJ
A; Molecule type: mRNA
A; Residues: 1-250, L', 252-253, V', 255-349, L', 351-401, 'SA', 404-589 < RES>
A; Cross-references: GB: M86736; NID:9191766; PIDN:AAA37191.1; PID:9191767
B; Zhou, J; Gao, G; Crabb, J.W.; Serrero, G.
J: Biol. Chem. 268, 10863-10869, 1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 11
C38128
epithelin/granulin precursor - mouse
epithelin/granulin precursor - mouse
epithelin/granulin precursor - mouse
N.A. Alternate names: acrogrants; Pc-cell-derived growth factor
C.Species: Mus musculus (house mouse)
C.Species: Green, J.M.; Neubauer, M.G.; Buckley, S.D.; McDonald, V.L.; Todaro, G.J
J. Biol. Chem. 267, 13073-13078, 1992
A;Title: The epithelin precursor encodes two proteins with opposing activities on epithe
A; McGression: C38128
A;Molecule type: mRNA
A; Mesidues: 1-589 < PLO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Title: Exon/intron organization of the gene encoding the mouse epithelin/granulin pred
A;Reference number: S32503; MUID:93245991; PMID:8482392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Cross-references: GB: AE005173; NID: 911072032; PIDN: AAG28911.1; GSPDB: GN00141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Molecule type: mRNA
A;Residues: 1-589 <PLC>
A;Cross-references: GB:X62321; NID:g50851; PIDN:CAA44197.1; PID:g50852
R;Baba, T.; Nemoto, H; Matanabe, K.; Arai, Y.; Gerton, G.L.
FEBS Lett. 322, 89-94, 1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ;
;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 464;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 44;
Pred. No.
                                               EKAPAHLSLPDPQALK 16
                                                                          FMHPRHLSLPDRAVLR 78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                nilarity 64.3%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2 KAPAHLSLPD--PQ 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | ||||::|| ||
81 KRPAHLNIPDLNPQ 94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Residues: 1-464 <STO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Accession: S32503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Map position: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Gene: F12A21.5
                                                                                                  63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                               å
                                                                                            셤
```

```
hypothetical protein AGR_L_2112 [imported] - Agrobacterium tumefaciens (strain C58, Cere C5species: Agrobacterium tumefaciens C; Species: 22-Oct-2001 #sequence_revision 22-Oct-2001 #text_change 11-Jan-2002 C; Accession: C98263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ayritle: Genome Sequence of the Plant Pathogen and Biotechnology Agent Agrobacterium tum
Ay Reference number: A97359; PMID:11743194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    R;Goodner, B.; Hinkle, G.; Gattung, S.; Miller, N.; Blanchard, M.; Qurollo, B.; Goldman, A.; Liu, F.; Wollam, C.; Allinger, M.; Doughty, D.; Scott, C.; Lappas, C.; Markelz, B.; Science 294, 2323-2328, 2001
                                                                                                                                                                                                                                                                                                                               R;Kaneko, T.; Nakamura, Y.; Wolk, C.P.; Kuritz, T.; Sasamoto, S.; Watanabe, A.; Iriguchi
Nakazaki, N.; Shimpo, S.; Suglmoto, M.; Takazawa, M.; Yamada, M.; Yasuda, M.; Tabata, S
DNA Res. 8, 205-213, 2001
                                                                                                                                                                                                                                                                                                                                                                                                                 A:Title: Complete Genomic Sequence of the Filamentous Nitrogen-fixing Cyanobacterium And
A:Reference number: AB1807; MUID:21595285; PMID:11759840
A:Accession: AH2237
                                                                                                                                                                                                                                                                    A;Note: Nostoc sp. strain PCC 7120 is a synonym of Anabaena sp. strain PCC 7120 C;Date: 14-Dec-2001 #sequence_revision 14-Dec-2001 #text_change 30-Jun-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ó
Ĥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Wolecule type: DNA
A;Residues: 1-566 <KRDA
A;Cross-references: GB:BA000019; PIDN:BAB75154.1; PID:917132588; GSPDB:GN00179
A;Experimental source: strain PCC 7120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             L; Cross-references: GB: AE007870; PIDN: AAK89629.1; PID: 915159526; GSPDB: GN00170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                      septum site-determining protein [imported] - Nostoc sp. (strain PCC 7120)
÷.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 406;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 366;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4; Indels
6; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 43; DB 2;
Pred. No. 46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pred. No. 41;
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ed. No. 46;
Mismatches
3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 43;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Search completed: July 8, 2003, 16:29:29
Job time.: 21.2436 secs
                                                                          1 EKAPAHL---SLPDPQALKRDV 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 EKAPAHLSLPDPQALKR 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                :|| | :| || || 56 QKAFAGVSEPDPDALRK 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 43.9%;
Best Local Similarity 52.9%;
Matches 9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Gene: AGR_L_2112
A;Map position: linear chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity 77.8%;
Matches 7; Conservative
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3 APAHLSLPD 11
||||::|||
78 APAHINLPD 86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Status: preliminary
A; Molecule type: DNA
A; Residues: 1-406 <KUR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Status: preliminary
                                                                                                                                                                                                                                                                                                                     C; Accession: AH2237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Accession: C98263
10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Gene: minc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                            q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 õ
```

```
GenCore version 5.1.6 Copyright (c) 1993 - 2003 Compugen Ltd.
```

OM protein - protein search, using sw model

July 8, 2003, 16:16:30 ; Search time 9.25641 Seconds (without alignments) 85.136 Million cell updates/sec Run on:

US-09-824-647-6 98 1 EKAPAHLSLPDPQALKRDV 19 Title: Perfect score: Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

112892 seqs, 41476328 residues Searched:

112892 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

SwissProt\_40:\* Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

#### SUMMARIES

							•								,																			
	Description	h granulins	н	2	escherichia	pseudomonas	mus musculu	mus musculu		erythrocebu	rattus norv	canine aden	homo sapten	vaccinia vi	vaccinia vi	vaccinia vi	vaccinia vi	variola vir	homo sapten	saccharomyc	saccharomyc	mus musculu	rattus norv	escherichta	homo sapien	treponema p	homo sapten	mycobacteri	mouse intra	homo sapten	rattu	homo sapien		mus musculu
	escri	P28799	P23785	P28798	P31600	09hv52	035214	09.jm98	P53206	008339	P29067	P14266	015213	057220	P20635	09jf93	20636	P33806	P33897	P22224	P25040	060753	063086	P04395	09y3a4	P96115	09ubr1	010609	P12894	014511	032569	095613	P15408	P47930
	Д		0.	Δ,	Δ,	a	0	a	Ω.,	a	Д,	<u>a</u>	0	0	Δ,	a	D.	2	<u> </u>	Δ,		a	ď	<u>-</u>	æ	Ω,	o	ď	Δ,	0			Δ,	Ωı
	ID	GRN_HUMAN	GRN RAT	GRN_MOUSE	NFRA_ECOLI	SECG_PSEAE	OPSX_MOUSE	WDR8_MOUSE	CYSK_YEAST	CD4_ERYPA	ARR2_RAT	E1BL_ADECT	BIN4_HUMAN	ETF2_VACCA	ETF2_VACCC	ETF2_VACCT	ETF2_VACCV	ETF2_VARV	ALD_HUMAN	SC15_YEAST	YOC2_YEAST	CTF1_MOUSE	CTF1_RAT	3MG2_ECOLI	CG96_HUMAN	RUVB_TREPA	BUP1_HUMAN	SYR_MYCTU	POL_IPMAI	NRG2_HUMAN	NRG2_RAT	PCN2_HUMAN	- 1	FRA2_MOUSE
	DB	-	Н	Н	-	-	Н	-	Н	-	-	~	-	-	-	-	-	~		-	Н	Н	-	Н	-	-	-	-	-	-	_		-	Н
	Length	593	588	589	990	129	337	462	393	397	410	438	610	710	710	710	710	710	745	910	408	203	203	282	323	320	384	550	814	850	868	3321	326	326
æ	Query Match	100.0	64.3	51.0	43.9	42.9	42.9	42.9	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	•		40.8		40.8	40.8	40.8	40.8				•	39.8	39.8
	Score	. 86	63	20	43	42	42	42	41	41	41	41	41	41	41	41	41	41	41	41	40.5	40	40	40	40	40	40	40	40	40	40	40	39	39
	Result No.	1	7	e	4	S	9	7	ω	6	10	11	12	. 13	14	12	16	17	18	19	70	21	22	53	24	25	56	27	78	53	30	31	32	33

P51145 rattus norv	084713 chlamydia t	2998k4 myxoma viru P05085 saccharomyc	088322 mus musculu	P35928 erysimum la	P25655 saccharomyc	P12263 sus scrofa	P36992 pleuronecte	. P30042 homo sapien	P35884 thiobacillu	
FRA2_RAT	TIG_CHLTR	ETF2_MYXVL ARG2_YEAST	NID2_MOUSE	POLR_ELV	NOT1_YEAST	FA8_PIG	AMBP_PLEPL	ES1_HUMAN	TRA2_THIFE	
<b>~</b> ~			-		Н	-	-	н	-	
327	442	711 880	1403	1748	2108	2133	355	268	296	
39.8	39.8	39.8	39.8	39.8	39.8	39.8	39.3	38.8	38.8	
39	n 01	6 6 6 6	39	36.	. 39	39	38.5	38	38	
34	36	37 38	39	40	41	42	43	44	45	

# ALIGNMENTS

-

RESULT 1

```
18
58
122
204
278
                                                                                                                                                                                                                     rissum-Kidney;
                                                                                                                               TISSUE-Kidné§
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PEPTIDE
PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PEPTIDE
   This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bloinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
FUNCTION: GRANULINS HAVE POSSIBLE CYTOKINE-LIKE ACTIVITY. THEY MAY PIAT A ROLE IN INFLAMMATION, WOUND REPAIR, AND TISSIE REMODELING. FUNCTION: GRANULIN A PROMOTES PROLIFERATION OF THE EPITHELIAL CELL. LINE A431 IN CUTFORE WHILE GRANULIN B ACTS AS AN ANTAGONIST OF GRANULIN B, INHIBITING THE GROWTH.

ALTERNATIVE PRODUCTS: 2 150forms; 1 (shown here) and 2; may be produced by alternative splicing.

TISSUE SPECIFICITY: IN MYELOGENOUS LEUKENIC CELL LINES OF PROMONOCYTIC, PROMYELOCYTIC, AND PRORYTHENIAL CELL LINES. PRESENT IN INFLAMMATORY CELLS AND BONE MARROW. HIGHEST LEVELS IN KIDNEY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                  GRANULIN 4.
GRANULIN 4.
GRANULIN 5.
GRANULIN 6.
GRANULIN 7.
N-LINKED (GLCNAC. ..) (POTENTIAL).
N-LINKED (GLCNAC. ..) (POTENTIAL).
N-LINKED (GLCNAC. ..) (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                      PROSITE; PS00799; GRANULINS; 7.
Cytokine; Repeat; Glycoprotein; Signal; Alternative splicing;
Polymorphism.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 593;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S -> H (IN REF. 6).
W -> H (IN REF. 6).
4E402BDB16DE2819 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      •
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       N-LINKED (GLCNAC. N-LINKED (GLCNAC. N-LINKED (GLCNAC. N-LINKED (GLCNAC. NINSING (IN ISOFORM 2 G -> 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 98; DB 1; I
Pred. No. 5.9e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               G -> Q.
/FTId=VAR_003445.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    588 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pred. No. 5.
                                                                                                                                                                                                                                                                                                                                                                                        PARAGRANULIN
                                                                                                             PTM: GRANULINS ARE DISULFIDE BRIDGED
                                                                                                                                                                                                                                                                                                                                                                                  ACROGRANIN.
                                                                                                                                                                                                                                                                                                                                                                                                              GRANULIN 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRT;
                                                                                                                                                                                                         EMBL; M75161; AAA58617.1; ALT_SEQ.
EMBL; X62320; CAA44196.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EKAPAHLSLPDPQALKRDV 364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 EKAPAHLSLPDPQALKRDV 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .
                                                                                                                                                                                                                              EMBL; AF055008; AAC09359.1; -...
EMBL; BC000324; AAH00324.1; -...
EMBL; BC010577; AAH10577.1; -...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GRN_RAT STANDARD; 1 P23785; 01-NOV-1991 (Rel. 20, Created)
                                                                                                                                                                                                                                                                                                             interPro; IPR000118; Granulin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     63473 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100.0%;
100.0%;
                                                                                                                                                                                                                                                                                                                      Pfam; PF00396; granulin; 7. SMART; SM00277; GRAN; 7.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity 100.
Matches 19; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  219
386
                                                                                                                                                                                                                                                                                                                                                                                                                                                  2496
2573
                                                                                                                                                                                                                                                                                         Genew; HGNC:4601; GRN.
MIM; 138945; -.
                                                                                                                                                                                                                                                            PIR; A38118; GYHU.
PIR; D36698; D36698.
PIR; JC1284; JC1284.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            386
593 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VARSPLIC
VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                           PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                      PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                   PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                    PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                              PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                          PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                             PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                       SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                 CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a a b
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-slb.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Biochem. Biophys. Res. Commun. 173:1161-1168(1990).
-!- FUNCTION: GRANULINS HAVE POSSIBLE CYTOKINE-LIKE ACTIVITY. THEY MAY PLAY A ROLE IN INFLAMMATION, WOUND REPAIR, AND TISSUE REMODELING.
-!- TISSUE SPECIFICITY: UBIOUITOUS; MOST ABUNDANT IN THE SPLEEN AND SEVERAL TISSUES OF ENDOCKINE SIGNIFICANCE.
-!- PTM: GRANULINS ARE DISULFIDE BRIDGED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Plowman G.D., Green J.M., Neubauer M.G., Buckley S.D., McDonald V.L., Todaro G.J., Shoyab M.;
"The epithelin precursor encodes two proteins with opposing activities on epithelial growth.";
J. Biol. Chem. 267:13073-13078(1992).
                                                                                                                                                                                                                                                                                                              Eukaryota; "Metazoa; Chordata; Craniata; Vertebrata; Euteleoŝtomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
NCBL_TaxID-10116;
01-DEC-1992 (Rel. 24, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Granulins precursor (Acrogrania) [Contains: Granulin 1 (Granulin 6);
Granulin 2 (Granulin P); Granulin 3 (Granulin B) (Epithelin 2);
Granulin 4 (Granulin A) (Epithelin 1); Granulin 5 (Granulin C);
Granulin 6 (Granulin D); Granulin 7 (Granulin E)].
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bateman A., Belcourt D.R., Bennett H.P., Lazure C., Solomon S.; "Granulins, a novel class of peptide from leukocytes."; Biochem. Biophys. Res. Commun. 173:1161-1168(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDILINE-91045907; PubMed-2236009; Shoyab M., McDonald V.L., Byles C., Todaro G.J., Plowman G.D.; Shoyab M., McDonald V.L., Byles C., Todaro G.J., Plowman G.D.; Epithelins 1 and 2: isolation and characterization of two cysteine-rich growth-modulating proteins."; Proc. Natl. Acad. Sci. U.S.A. 87:7912-7916(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE-94062640; PubMed-8243292;
Bandari V., Giald A., Bateman A.;
"The complementary decyribonucleic acid sequence, tissue
distribution, and cellular localization of the rat granulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A., AND SEQUENCE OF 204-259 AND 278-334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                POTENTIAL.
ACROGRANIN.
GRANDLIN 1.
GRANDLIN 2.
GRANDLIN 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              or send an email to license@isb-sib.ch)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Endocrinology 133:2682-2689(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE=92317004; PubMed=1618805;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TISSUE-Bone marrow;
MEDLINE-91097544; PubMed-2268320;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Cytokine; Repeat; Glycoprotein; SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE OF 204-225 AND 279-299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro; IPR000118; Granulin. Pfam; PF00396; granulin; 7.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; M97750; AAA16903.1; -. EMBL; X62322; CAA44198.1; -.
                                                                                                                                                                                                                                                                                          Rattus norvegicus (Rat).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GRAN; 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PIR; A36199; A36199.
PIR; B36199; B36199.
PIR; E36698; E36698.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE OF 278-328.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bloinformatics and the EWBL outstation the European Bloinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (see http://www.isb-sib.ch/announce/or send an email to licenseelab-sib.ch).
                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Musinae; Musincel_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                  Granulin
                                                 (POTENTIAL).
                                        (POTENTIAL)
                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                      01-OCT-1994 (Rel. 30, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Granulins precursor (Acrogranin) [Contains: Granulin 1; Granu
Granulin 3; Granulin 4; Granulin 5; Granulin 6; Granulin 7].
                                                                                                                                              Score 63; DB 1; Length 588;
Pred. No. 0.021;
1; Mismatches 5; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Baba T., Nemoto H., Watanabe K., Arai Y., Gerton G.L.;
"Exon'intron organization of the gene encoding the mouse
epithalin/granulin precursor (acrogranin).";
FEBS Lett. 322:89-94(1993).
                                                                                               -> T (IN REF. 4).
-> I (IN REF. 2).
113D434F7E099B31 CRC64;
GRANULIN 5.
GRANULIN 6.
GRANULIN 7.
N-LINKED (GLCNAC...)
N-LINKED (GLCNAC...)
N-LINKED (GLCNAC...)
S -> FP (IN REF. 2).
IK -> SB (IN REF. 4).
                                                                                                                                                                                                                                                                                      589 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Cytokine; Repeat; Glycoprotein; Signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE-93245991; PubMed-8482392;
                                                                                                                                                                                                            343 KKVTASLSLPDPQILKNDV 361
                                                                                                                                                                                                 1 EKAPAHLSLPDPQALKRDV 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pfam; PF00396; granulin; 7.
SMART; SM00277; GRAN; 7.
PROSITE; PS00799; GRANULINS; 7.
                                                                                                                                                                                                                                                                                                           01-DEC-1992 (Rel. 24, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IPR000118; Granulin.
                                                                                                                           Ĭ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; D16195; BAA03736:1; -.
                                                                                                                                                  64.38;
                                                                                                                                                             68.48;
                                                                                                                        63369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; M86736; AAA37191.1;
EMBL; X62321; CAA44197.1;
                                                                                                                                                            Local Similarity 68.4 nes 13; Conservative
                                                                                                                                                                                                                                                                                     STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                    musculus (Mouse).
                                                                                                            388
588 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
  361
438
512
372
372
525
525
307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (GD; MGI:95832;
                                                                                                                                                                                                                                                                                   GRN_MOUSE
P28798;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (nterPro;
                                      CARBOHYD
CARBOHYD
CARBOHYD
CONFLICT
CONFLICT
CONFLICT
CONFLICT
SEQUENCE
                                                                                                                                                  Query Match
             PEPTIDE
PEPTIDE
  PEPTIDE
                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                        GRN_MOUSE
                                                                                                                                                                                                                                                            RESULT 3
                                                                                                                                                                                                                                                                                                EFFFFFFFF S
                                                                                                                                                                                                  ò
                                                                                                                                                                                                                     g
```

```
Ġ
                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Oshima T., Aiba H., Baba T., Fujita K., Hayashi K., Honjo A.,
Ikemoto K., Inada T., Itoh T., Kajihara M., Kanai K., Kashimoto K.,
Kimura S., Kitagawa M., Makino K., Masuda S., Miki T., Mizobuchi K.,
Mori H., Motomura K., Nakamura Y., Nashimoto H., Nishio Y., Saito N.
Sampel G., Seki Y., Tagami H., Takemoto K., Wada C., Yamamoto Y.,
Yano M., Horiuchi T.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
STRAIN=KIZ - MG1655;
STRAIN=KIZ - MG1655;
STRAIN=8742617; PubMed-9278503;
Blattner F.R., Plunkett G. III, Bloch C.A., Perna N.T., Burland V.,
Riley M., Collado-Vides J., Glasner J.D., Rode C.K., Mayhew G.F.,
Gregor J., Davis N.W., Kirkpatrick H.A., Goeden M.A., Rose D.J.,
Mau B., Shao Y.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
Chung E., Allen E., Araujo R., Aparicio A., Davis K., Duncan M.,
Chung E., Allen E., Kalman S., Komp C., Rurdi O., Lew H., Lin
Namath A., Oefner P., Roberts D., Schramm S., Davis R.W.;
Submitted (JAN-1997) to the EMBL/GenBank/DDBJ databases.
                                                                                                              (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                Bacteria; Proteobacteria; gamma subdivision; Enterobacteriaceae;
Escherichia
                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Kiino D.R., Singer W.S., Rothman-Denes L.B.;
"Two overlapping genes encoding membrane proteins required for bacteriophage N4 adsorption.";
J. Bacteriol. 175:7081-7085(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        rano M., Horiuchi T.;
A 718-kb DNA sequence of the Escherichia coli K-12 genome
                                                                                                                                                                                                 Score 50; 'DB 1; Length 589;
Pred. No. 2.4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "The complete genome sequence of Escherichia coli K-12.";
Science 277:1453-1474(1997).
                                                                                                                                                                                                                                6; Indels
                                                                                                                                                                 -> R (IN REF. 2).
1DE8229C413CB787 CRC64;
                                                                                                                                                                                                                                                                                                                                                                01-JUL-1993 (Rel. 26, Created)
01-JUL-1993 (Rel. 26, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Bacteriophage N4 adsorption protein A precursor.
NFRA OR B0568.
                                                                                                                                         (GLCNAC.
                                                                                                              N-LINKED (GLCNAC.
                                                                                                                                                      (GLCNAC.
                                                                                                                                                                                                                                1; Mismatches
                                                            GRANULIN 4.
GRANULIN 5.
GRANULIN 6.
GRANULIN 7.
                         GRANULIN 1
GRANULIN 2
                                                                                                                                         N-LINKED
                                                  GRANULIN
                                                                                                                                                    N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE-94042874; PubMed-8226649;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE-97061202; PubMed-8905232;
                                                                                                                                                                                                                                                                       u
                                                                                                                                                                                                                                                         1 EKAPAHLSLPDPQALKRD 18
                                                                                                                                                                              Ĭ.
                                                                                                                                                                                                     Query Match 51.0%;
Best Local Similarity 61.1%;
Matches 11; Conservative
                                                                                                                                                                              63458
                                                                                                                                                                                                                                                                                                                                                    STANDARD;
17
589
7113
7113
260
334
7414
7493
7568
                                                                                                                         . 263
373
373
526
350
589 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                         Escherichia coli.
             18
758
7122
205
280
362
440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=562;
                                                                                                                                                                                                                                                                                                                                                NFRA_ECOLI
P31600;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRAIN-K12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRAIN-K12
                                                                                                                                        CARBOHYD
CARBOHYD
CONFLICT
SEQUENCE
                      PEPTIDE
PEPTIDE
PEPTIDE
PEPTIDE
PEPTIDE
PEPTIDE
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                     NFRA_ECOLI
              CHAIN
                                                                                                                                                                                                                                                                                                                         RESULT
 δλ
                                                                                                                                                                                                                                                                                   g
```

```
between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to licenseéisb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                               This SWISS-PROT entry is copyright. It is produced through a collaboration
corresponding to the 12.7-28.0 min region on the linkage map."; DNA Res. 3:137-155(1996).
-!- FUNCTION: REQUIRED FOR BACTERIOPHAGE N4 ADSORPTION. SERVES AS THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRAIN-ATCC 1569. / PAO1;
MEDLINE-20437337; PubMed=10984043;
StOVEC C.K., Pham X. O.T., Erwin A.L., Mizoguchi S.D., Warrener P.,
Stover C.K., Pham X. O.T., Erwin A.L., Mizoguchi S.D., Warrener P.,
Hickey M.J., Brinkman F.S.L., Hufnagle W.O., Kowalik D.J., Lagrou M.
Garber R.L., Goltry L., Tolentino E., Westbrock-Wadman S., Yuan Y.,
Brody L.L., Coulter S.N., Polger K.R., Kas A., Larbig K., Lim R.M.,
Smith K.A., Spencer D.H., Wong G.K.-S., Wu Z., Paulsen I.T.,
Reizer J., Saler M.H., Hancock R.E.W., Lory S., Olson M.V.;
"Complete genome sequence of Pseudomonas aeruginosa PAO1, an
Nature 406:959-964(2000)";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -1- FUNCTION: INVOLVED IN PROTEIN EXPORT. PARTICIPATES IN A EARLY EVENT OF PROTEIN TRANSLOCATION (BY SIMILARITY).
-1- SUBCELLULAR LOCATION: Integral membrane protein. Inner membrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BACTERIOPHAGE N4 ADSORPTION PROTEIN A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pseudomonas aeruginosa.
Bacteria; Proteobacteria; gamma subdivision; Pseudomonadaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Phage recognition; Outer membrane; Signal; Complete proteome. SIGNAL 1 \\ 27 \\ {\rm POTENTIAL}.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  43.9%; Score 43; DB 1; Length 990; 56.2%; Pred. No. 54; tive 1; Mismatches 6; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             990 AA; 111307 MW; AAA616665D1C2E72 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      16-0cT-2001 (Rel. 40, Created)
16-0cT-2001 (Rel. 40, Last sequence update)
16-0cT-2001 (Rel. 40, Last annotation update)
16-0cT-2001 (Rel. 40, Last annotation update)
SECG OR PA4747.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (By similarity).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT; 129 AA
                                                                                  SUBCELLULAR LOCATION: Outer membrane.
                                                                                                                                                                                                                                                                                                                AE000161; AAC73669'1; -. U82598; AAB40766.1; -. D90699; BAA35202.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ||| ||| || || 671 PAHKGLPDDPALIRQL 686
                                                                                                                                                                                                                                                                                               EMBL; 116945; AAC36849.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4 PAHLSLPDPQALKRDV 19
                                                                                                                                                                                                                                                                                                                                                                             PIR; B49351; B49351.
EcoGene; EG11740; nfrA.
InterPro; IPR001440; TPR.
Pfam; PF00515; TPR; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity 56.2
Matches 9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STANDARD;
                                                                  PHAGE RECEPTOR. .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=287;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SECG_PSEAE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      09HV52;
                                                                                                                                                                                                                                                                                                                                      EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SECG_PSEAE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
(See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SIMILARITY: BELONGS TO FAMILY 1 OF G-PROTEIN COUPLED RECEPTORS.
                                                                                                                                                                                                                                                                                                                                                                                                     Mus musculus (Mouse).
Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Butheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
NCBI_TaxID-10090;
                                                                               Protein transport; Translocation; Transmembrane; Inner membrane;
Complete proteome.
                                                                                                                                                                Score 42; DB 1; Length 129;
Pred. No. 8.3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              G-protein coupled receptor; Transmembrane; Glycoprotein. DOMAIN 1 26 EXTRACELLULAR.
                                                                                                                                       C1EF8BB2A3D52634 CRC64;
                                                                                                                                                                                                                                                                                                                                              15-JUL-1998 (Rel. 36, Created)
15-JUL-1998 (Rel. 36, Last sequence update)
30-MAY-2000 (Rel. 39, Last annotation update)
Visual pigment-like receptor peropsin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EXTRACELLULAR.
1 (POTENTIAL).
                                                                                                                                                                                                                                                                                                                        337 AA
                                                                                                                                                                                              4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pfam; PF00001; 7tm_1; 1.

PROSITE; PS00231; G_PROTEIN_RECEP_F1_1; 1.

PROSITE; PS50052; G_PROTEIN_RECEP_F1_2; 1.

PROSITE; PS00238; OPSIN; 1.
  entities requires a license agreement (Se or send an email to license@isb-sib.ch).
                                                                                                               POTENTIAL.
                                                                                                                          POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MGD; MGI:1097709; Rrh.
InterPro; IPR000276; GPCR_Rhodpsn.
InterPro; IPR001760; Opsin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TISSUE-Retina;
MEDLINE-97420780; PubMed-9275222;
                                                                                                                                                                                                                                                  77 EKSDALQHIGLPDPAVLEQ 95
                                                                                                                                                                                                                       1 EKAPA--HLSLPDPQALKR 17
                                                                                                            5 25 PC PC 56 76 PC 129 AA; 13207 MW;
                                           EMBL; AE004888; AAG08133.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; AF012271; AAC53344.1; -.
                                                                                                                                                                   42.98;
                                                                                                                                                                                 47.48;
                                                      InterPro; IPR004692; SecG. TIGREAMS; TIGR00810; SecG;
                                                                                                                                                    Query Match ( Best Local Similarity 4/.... 9; Conservative
                                                                                                                                                                                                                                                                                                                        STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OPSIN SUBFAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                        OPSX_MOUSE
                                                                                                            TRANSMEM
TRANSMEM
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TRANSMEM
                                                                                                                                                                                                                                                                                                                                      SS SS R R R R R F F R S
                                                                                                                                                                                                                          ö
```

```
1 EKAP----AHLSLPDPQAL 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          393 AA; 42801 MW;
                                                                                                                                                                                                                                                                                                 01-0CT-1996 (Rel. 34, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; Z72797; CAA96995.1; -. HSSP; P35520; 1JBQ.
                                                        Query Match
Best Local Similarity 47.48;
watches 9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              53.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ||:|||| :|::
||34 AHISLPDDTSLEK 146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity 53.0.
The Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5 AHLSLPDPQALKR 17
                                                                                                                                                                                                                                                                STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SYNTHASE FAMILY.
                                  462 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=4932;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       chromosome VII.
                                                                                                                                                                                                                                                            CYSK_YEAST
P53206;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE
                                  SEQUENCE
REPEAT
                  REPEAT
                                                                                                                                                                                                                                             CYSK_YEAST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 9
CD4_ERYPA
                                                                                                                                                                                                                                                                                  SO TEN NO DE REPRESENTATION OF COLUMN NEW YORK OF C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (see http://www.isb-sib.ch/announce or send an email to license@liber.ib.ch).
                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                               N-LINKED (GLCNAC. . .) (POTENTIAL).
N-LINKED (GLCNAC. . .) (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                 Score 42; DB 1; Length 337;
Pred. No. 24;
1; Mismatches 7; Indels
                                                                                                                                                                                                                                                                                                  353E4E2278EDBFA6 CRC64;
                                                                                                                                                                                                                                                                 POTENTIAL.
RETINAL CHROMOPHORE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             InterPro: IPR001680; WD40.
Pfam; PF00400; WD40; 3.
SMARY; SM00320; WD40; 2.
PROSITE; PS00678; WD_REPEATS_1; FALSE_NEG.
PROSITE; PS50082; WD_REPEATS_2; FALSE_NEG.
PROSITE; PS50082; WD_REPEATS_REGION; FALSE_NEG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 16-OCT-2001 (Rel. 40, Created)
16-OCT-2001 (Rel. 40, Last sequence update)
16-OCT-2002 (Rel. 41, Last annotation update)
WD-repeat protein 8.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   462 AA.
                                                                                                      EXTRACELLULAR.
5 (POTENTIAL).
                                                     3 (POTENTIAL).
CYTOPLASMIC.
                2 (POTENTIAL)
EXTRACELLULAR
                                                                                                                                                                             EXTRACELLULAR
                                                                                                                                                                                              (POTENTIAL)
                                                                                       4 (POTENTIAL)
                                                                                                                                                             (POTENTIAL)
                                                                                                                                           CYTOPLASMIC.
                                                                                                                                                                                                                CYTOPLASMIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE-21295046; PubMed-11401440;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2222
2222
                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; AB034911; BAA92311.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                         2 KAPAHLSLPDPQALKRDV 19
                                                                                                                                                                                                                                                                                                    37208 MW;
                                                                                                                                                                                                                                                                                                                                     42.98;
                                                                                                                                                                                                                                                                                                                                                      ilarity 38.9%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4GD; MGI:1891749; Wdr8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mus musculus (Mouse).
                                                                                                                                                                                                                                             182
98
284
337 AA;
                                                                                                                                                                                                                                                                                                                                                      Local Similarity
nes 7; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Repeat; WD repeat.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID-10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WDR8 OR DD57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WDR8_MOUSE
DOMAIN
TRANSMEM
DOMAIN
TRANSMEM
DOMAIN
TRANSMEM
                                                                                                                                                                                                              DOMAIN
CARBOHYD
                                                                                                                                                                                                                                                                 DISULFID
BINDING
                                                                                                        DOMAIN
TRANSMEM
                                                                                                                                                                           DOMAIN
TRANSMEM
                                                                                                                                                               PRANSMEM
                                                                                                                                                                                                                                                 CARBOHYD
                                                                                                                                                                                                                                                                                                  SEQUENCE
                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REPEAT
REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RPEAT
                                                                                                                                           OMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    89ML60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WDR8_MOUSE
                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
 ð
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                  ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -i- COFACTOR: PYRIDOXAL PHOSPHATE.
-i- PATHWAY: Cysteine biosynthesis.
-i- SIMILARITY: BELONGS TO THE CYSTEINE SYNTHASE/CYSTATHIONINE BETA-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRAIN=S288c;
MEDLINE=97435481; PubMed=9290212;
Rieger M., Brueckner M., Schaefer M., Mueller-Auer S.;
Rieger enalysis of 203 kilobases from Saccharomyces cerevisiae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PYRIDOXAL PHOSPHATE (BY SIMILARITY). 76C73396D77B69AC CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Saccharomyces cerevisiae (Baker's yeast).
Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes;
Saccharomycetales; Saccharomycetaceae; Saccharomyces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     reast 13:1077-1090(1997).
-!- CATALYTIC ACTIVITY: 03-acetyl-L-serine + H(2)S = L-cysteine
                                                                                                                                                               4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             41.8%; Score 41; DB 1; Length 393; 53.8%; Pred, No. 41;
                                                                                                                   Length 462;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-OCT-1996 (Rel. 34, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Putative cysteine synthase (EC 4.2.99.8) (0-acetylserine sulfhydrylase) (C-acetylserine (Thiol)-lyase) (CSASE).
369 WD 5.
410 WD 6.
52026 MW; 0142524BB1801D51 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PROSITE; PS00901; CYS_SYNTHASE; 1.
Hypothetical protein; Lyase; Cysteine biosynthesis;
Pyridoxal phosphate.
                                                                                                                      42.9%; Score 42; DB 1; 47.4%; Pred. No. 34;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         393 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4; Mismatches
                                                                                                                                                                                  3; Mismatches
                                                                                                                                                      Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SGD; S0003244; YGR012W.
Interpro: IPR001926; B6_enzyme_beta.
Interpro: IPR001216; Cys_synthase.
Pfam: PF00291; PALP; 1.
```

397 AA

PRT;

STANDARD;

us-09-824-647-6.rsp

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMES outstation the European Bioinformatics institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N-LINKED (GLCNAC. . .) (BY SIMILARITY).
N-LINKED (GLCNAC. . .) (BY SIMILARITY).
                                                                                                                                                                                                                                                            MEDLINE-93049640; PubMed-1425921;
Semagaard A., Hixsch V.M., Johnson P.R.;
"Cloning and sequences of primate CD4 molecules: diversity of the
cellular receptor for simian immunodeficiency virus/human
                              01-FEB-1995 (Rel. 31, Created)
1-FEB-1995 (Rel. 31, Last sequence update)
15-JUN-2002 (Rel. 41, Last amoctation update)
T-cell surface glycoprotein CD4 (T-cell surface antigen T4/Leu-3)
                                                                                                                              Erythrocebus patas (Red guenon) (Hussar).
Bukaryota: Metazoa; Chordata; Craniata: Vertebrata; Euteleostomi;
Mammalla; Eutheria: Primates; Catarrhini; Cercopithecidae;
Cercopithecinae; Erythrocebus.
                                                                                                                                                                                                                                                                                                                                             EUI. J. IMMUNOI. 22:2973-2981(1992).
-!- FUNCTION: ACCESSORY PROTEIN FOR MHC CLASS-II ANTIGEN/T-CELL RECEPTOR INTERACTION. MAY REGULATE T-CELL ACTIVATION.
-!- SUBUNIT: ASSOCIATION: MAY PSG-LCK (BY SIMILARITY).
-!- SUBCELLULAR LOCATION: Type I membrane protein.
-!- SIMILARITY: BELONGS TO THE IMMUNOGLOBULIN-LIKE C2-TYPE DOMAINS.
-!- SIMILARITY: CONTAINS 3 IMMUNOGLOBULIN-LIKE C2-TYPE DOMAINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Immunoglobulin domain; Transmembrane; Glycoprotein; T-cell;
Immune response; Repeat; Lipoprotein; Palmitate.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 41; DB 1; Length 397;
Pred. No. 41;
1; Mismatches 2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CYTOPLASMIC (POTENTIAL).
IG-LIKE V-TYPE DOMAIN.
IG-LIKE C2-TYPE DOMAIN 1.
IG-LIKE C2-TYPE DOMAIN 2.
IG-LIKE C2-TYPE DOMAIN 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PALMITATE (BY SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          44081 MW; 67887397A6B7EA4F CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SIMILARITY.
SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BY SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PALMITATE
                                                                                                                                                                                                                                                                                                                            immunodeficiency virus.";
Eur. J. Immunol. 22:2973-2981(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      InterPro; IPR003006; Ig_MHC.
InterPro; IPR003600; Ig_like.
InterPro; IPR003596; Ig_v
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; X73324; CAA51750.1; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SMART; SM00410; IG_like; 1.
SMART; SM00406; IGV; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        395
397
397 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 Similarity
10; Consery
                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                              NCBI_TaxID=9538;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pfam; PF00047
                                                                                               (Fragment).
CD4_ERYPA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TRANSMEM
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NON_TER
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DOMAIN
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                          Rattus norvėgicus (Rat).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eitheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ELT. J. Neurosci. 10:2607-2616(1998).
-I- FUNCTION: REGULATES BETA-ADRENERGIC RECEPTOR FUNCTION. BETA-ARRESTINS SEEM TO BIND PHOSPHORYLATED BETA-ADRENERGIC RECEPTORS, THEREBY CAUSING A SIGNIFICANT IMPAIRMENT OF THEIR CAPACITY TO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACTIVATE G(S) PROTEINS.
TISSUE SPECIFICITY: PREDOMINANTLY LOCALIZED IN NEURONAL TISSUES
AND IN THE SPLEEN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Differential expression of alternative splice variants of oeta-arrestin-1 and -2 in rat central nervous system and peripheral
                                                                                                                                                                                                                                                                                                                                                                                                       TISSUE-Pineal gland;
WEDLINE-94140898;
Craft C.M., Whitmore D.H., Wiechmann A.F.;
*Cone arrestin identified by targeting expression of a functional
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                 STRAIN-Sprague-Dawley; TISSUE-Brain; MEDLINE-92388146; PubMed=1517224; Attramadal H., Arriza J.L., Rokl C., Dawson T.M., Codina J., Kwatra M.M., Shyder S.H., Caron M.G., Lefkowitz R.J.; Beta-arrestin2; a novel member of the arrestin/beta-arrestin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRAIN-Sprague-Dawley; TISSUE-Retina;
MEDINE-99145674; PubMed-976731;
Komori N., Cain S.D., Roch J.-M., Miller K.E., Matsumoto H.;
"Differential expression of alternative splice variants of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 410;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   46340 MW; ODFA6A897C2B86BA CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .,
``
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -!- SIMILARITY: BELONGS TO THE ARRESTIN FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 41; DB 1;
Pred. No. 42;
5; Mismatches
                              01-DEC-1992 (Rel. 24, Created)
01-DEC-1992 (Rel. 24, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
16-GET-arrestin 2 (Arrestin, beta 2).
410 AA.
                                                                                                                                                                                                              7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     41.8%; Score 41; 42.9%; Pred. No. 4
                                                                                                                                                                                                                                                                                                                                      nily.";
Biol. Chem. 267:17882-17890(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                J. Biol. Chem. 269:4613-4619(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ProDom; PD002099; Arrestin; 1. PROSITE; PS00295; ARRESTINS; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro; IPR000698; Arrestin.
                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE OF 295-410 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE OF 305-386 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pfam; PF00339; arrestin; 1.
Pfam; PF02752; arrestin_C; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL; M91590; AAA74460.1; -. EMBL; U03627; AAA17551.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; AF051457; AAC28617.1;
HSSP; P08168; 1CF1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sensory transduction.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       410 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best_Local Similarity
Matches 6; Conserv
                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                 NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  tissues."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
 ARR2_RAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRINTS;
                                                                                                                                                                                                                                                                                                                                  family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     family
                 P29067
```

ö

Gaps

5,

11 | ||:| ||||| 249 EKLPLHLTL--PQAL 261

a

ð

1 EKAPAHLSLPDPQAL 15 Conservative

Matches

```
SMART: SM00320; WD40;
                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
'-hes 9; Conserve
                                                                                                                                                                                                                                                                     399
610 AA;
                                                                                                                                                                                                        Repeat; WD repeat.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=126794;
                                                                                                                                                                                                                                                                                                                                                                                                                            ETF2_VACCA
057220;
                                                                                                                                                                                                                                                                                                                                                                        507
                                                                                                                                                                                                                                                                                   SEQUENCE
                                                                                                                                                                                                                            REPEAT
REPEAT
                                                                                                                                                                                                                                                    REPEAT
                                                                                                                                                                                                                                                             REPEAT
                                                                                                                                                                                                                                                                          REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 13
ETF2_VACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -
P
                                                                                                                                                                                                                                                                                                                                                                                                                                      å
                                                                                                                                                                                                                                                           This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@lsb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ï
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Herberg J.A., Beck S., Trowsdale J.;
"TAPASIN, DAXX, RGL2, HKE2 and four new genes (BING 1, 3 to 5) form a
dense cluster at the centromeric end of the MHC.";
J. Mol. Biol. 277:839-857(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                       01-JAN-1990 (Rel. 13, Last sequence update)
01-NOV-1997 (Rel. 13, Last annotation update)
ElB protein, large T-antigen (Early ElB 49 kDa protein).
Cantine adenovirus type 2 (strain Toronto A 26-61).
NITUSES; GBDBA viruses, no RNA stage; Adenoviridae; Mastadenovirus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
NCBI_TaxID=9606;
                                                                                                                                                                                          SEQUENCE FROM N.A.
MEDLINE-90021176; PubMed-2800332;
Shibata R., Shinagawa M., Ilda Y., Tsukiyama T.;
"Nucleotide sequence of El region of canine adenovirus type 2.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                    ..
*
                                                                                                                                                                                                                                                                                                                                                                                                                            41.8%; Score 41; DB 1; Length 438; 62.5%; Pred. No. 46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Strausberg'R.;
Submitted (NOV-2000) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                        438 AA; 48865 MW; 4A7B9ABA4548421B CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   15-JUN-2002 (Rel. 41, Created)
15-JUN-2002 (Rel. 41, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
WD_repeat protein BING4.
                                                                                   438 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  610 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                  1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                        InterPro; IPR002612; AdenoE1B_55kDa.
Pfam; PF01696; Adeno_E1B_55K; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
MEDLINE-98213668; PubMed-9545376;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7 LSLPDP----QALKRD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  353 HITLPRPQSAPREI 366
          HLSLPDPQALKRDV 19
                                                                                                                                                                                                                                        Virology 172:460-467(1989)
                                                                                                                                                                                                                                                                                                                                                   EMBL; J04368; AAA42472.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STANDARD;
                                                                                    STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens (Human).
                                                                                                                                                                                                                                                                                                                                                              PIR; C34165; ERADC2.
                                                                                                                                                                                                                                                                                                                                                                                                                                      Best_Local Similarity
Matches 10; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CEORFIL OR BING4.
                                                                                                                                                                                                                                                                                                                                                                                               Early protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BIN4_HUMAN
015213;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       rissue-Lund
                                                                                   E1BL_ADECT
                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BIN4_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 12
                                                               RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                             셤
          8
```

```
This SWISS-PROF entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                          This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an,email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE-98263813; PubMed-9601507;
Antoine G., Scheiflinger F., Dorner F., Falkner F.G.;
The complete genomic sequence of the modified vaccinia Ankara strain:
comparison with other orthopoxviruses.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    late genes.";
Proc. Natl. Acad. Sci. U.S.A. 87:4401-4405(1990).
-!- FUNCTION: ACTS WITH RNA POLYMERASE TO INITIATE TRANSCRIPTION FROM
EARLY GENE PROMOTERS. A DNA-DEPENDENT ATPASE ACTIVITY IS
ASSOCIATED WITH VETF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Viruses; dsDNA viruses, no RNA stage; Poxviridae; Chordopoxvirinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gershon P.D., Moss B.;
*Early transcription factor subunits are encoded by vaccinia virus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              16-OCT-2001 (Rel. 40, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Early transcription factor 82 kDa subunit (VETF large subunit).
MVA1181.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 610;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SUBUNIT: HETERODIMER OF A 70 kDa AND A 82 kDa SUBUNIT.
-!- SIMILARITY: CONTAINS 6 WD REPEATS (TRP-ASP DOMAINS)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OC11DA8EDCBA3DEE CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             710 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PROSITE; PSO0678; WD.REPEATS_1; FALSE_NEG.
PROSITE; PSSO082; WD_REPEATS_2; 1.
PROSITE; PSS0294; WD_REPEATS_REGION; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 41.8%; Score 41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CHARACTERIZATION.
MEDLINE-90272720; Pubmed-2190222;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    16-0CT-2001 (Rel. 40, Created)
16-0CT-2001 (Rel. 40, Last seq
16-0CT-2001 (Rel. 40, Last anno
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Vaccinia virus (strain Ankara)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       68041 MW;
                                                                                                                                                                                                                                                                                                            EMBL; 297184; CAB09994.1; -.
EMBL; BC000388; AAH00388.1; -
Genew; HGNC;13923; CGorf11.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               || || | | | || || || || || || || EKVPAELICLDPRAL 521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              60.08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 EKAPAHLSLPDPQAL 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Virology 244:365-396(1998)
                                                                                                                                                                                                                                                                                                                                                                                                   InterPro; IPR001680; WD40.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                   Pfam; PF00400; WD40; 1.
```

```
Search completed: July
Job time: 11.2564 secs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
 This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to licenseélsb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1;
            (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Appendix to 'The complete DNA sequence of vaccinia virus'.";
Virology 179:517-563(1990)
--- FUNCTION: ACTS WITH RNA POLYMERASE TO INITIATE TRANSCRIPTION FROM
EARLY GENE PROMOTERS. A DNA-DEPENDENT ATPASE ACTIVITY IS
ASSOCIATED WITH VETF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                Vaccinia virus (strain Copenhagen).
Viruses; dsDNA viruses, no RNA stage; Poxviridae; Chordopoxvirinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                               Goebel S.J., Johnson G.P., Perkus M.E., Davis S.W., Winslow J.P., Paoletti E.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S.J., Johnson G.P., Perkus M.E., Davis S.W., Winslow J.P.,
 and for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                         16-OCT-2001 (Rel. 40, Last annotation update)
Early transcription factor 82 kDa subunit (VETF large subunit).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SUBUNIT: HETERODIMER OF A 70 kDa AND A 82 kDa SUBUNIT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 41; DB 1; Length 710;
Pred. No. 77;
7; Mismatches 4; Indels
                                                                                                            41.8%; Score 41; DB 1; Length 710; 32.0%; Pred. No. 77;
 .Usage by
                                                   EMBL; U94848; AAB96460.1; -.
Transcription regulation; Activator; Late protein.
SEQUENCE 710 AA; 82330 MW; E3DCF437C4C66AFE CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Transcription regulation; Activator; Late protein.
SEQUENCE 710 AA; 82329 MW; F9683BC45B3F0C67 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "The complete DNA sequence of vaccinia virus."; Virology 179:247-266(1990).
                                                                                                                                                                                                                                                                  710 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           710 AA
                                                                                                                                                                                                                                                                                       01-FEB-1991 (Rel. 17, Created)
01-FEB-1991 (Rel. 17, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update
 modified and this statement is not removed.
                                                                                                                                      7; Mismatches
              entities requires a license agreement (some send an email to license@lsb-sib.ch)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 EKAP-----AHLSLPDPQALKRDV 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 EKAP-----AHLSLPDPQALKRDV 19
                                                                                                                                                                                    PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A. MEDLINE-91021027; Pubmed-2219722;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     41.8%;
32.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; M35027; AAA48124.1; -
PIR; 142517; 142517.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity 32.0.
                                                                                                                         Local Similarity 32.0
nes 8; Conservative
                                                                                                                                                                                                                                                                STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                           Orthopoxvirus.
NCBI_TaxID=10249;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPLETE GENOME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Paoletti E.;
                                                                                                                                                                                                                                                            ETF2_VACCC P20635;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 15
ETF2_VACCT
ID ETF2_VACCT
                                                                                                             Query Match
                                                                                                                          Best Loc
Matches
                                                                                                                                                                                                                                        RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ä
SSSS₩%
                                                                                                                                                                    ð
```

1 EKAP-----AHLSLPDPQALKRDV 19
. ||:| :| :| :| :
33 EKSPIYYFLRSHLNIQQPEIVKRHI 57

8, 2003, 16:25:05

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ä
                                                                                                                                                                                                                                                       Gaps
                                                                                                                                     dsDNA viruses, no RNA stage; Poxviridae; Chordopoxvirinae;
16-OCT-2001 (Rel. 40, Created)
16-OCT-2001 (Rel. 40, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Early transcription factor 82 kDa subunit (VETF large subunit).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .
9
                                                                                                                                                                                                                                                                                                                                                                                                                                  -i- SUBUNIT: HETERODIMER OF A 70 kDa AND A 82 kDa SUBUNIT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 710;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Transcription regulation; Activator; Late protein. SEQUENCE 710 AA; 82290 MW; 8C19BE5C578C5361 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 41; DB 1;
Pred. No. 77;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pred. No. 77;
7; Mismatches
                                                                                                                         (strain Tian Tan)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; AF095689; AAF33997.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  41.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ouery Match
Best Local Similarity 34...
1.0cal Similarity 34...
1.0cal Similarity 34...
                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                               NCBI_TaxID-10253;
                                                                                                                         Vaccinia virus
                                                                                                                                                                           Orthopoxvirus
                                                                                                                                                    Viruses;
```

```
GenCore version 5.1.6 Copyright (c) 1993 - 2003 Compugen Ltd.
```

OM protein - protein search, using sw model

July 8, 2003, 16:17:10 ; Search time 40.9231 Seconds (without alignments) 95.665 Million cell updates/sec Run on:

US-09-824-647-6 98 1 EKAPAHLSLPDPQALKRDV 19 Title: Perfect score: Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

671580 seqs, 206047115 residues Searched: 671580 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

sp\_unclassified:\* sp\_invertebrate:\* sp\_mammal:\* sp\_vertebrate:\* sp\_organelle: SPTREMBL\_21:\*
: sp\_archea:\*
: sp\_bacteria:\* sp\_rodent:\* sp\_plant:\* fungi:\* Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

sp\_rvirus:\* sp\_bacteriap:\* sp\_archeap:\*

#### SUMMARIES

		n	_		_	_	_	ŋ	S	Ω,	S.	o,	E	ပ	ř	
ion	omo sapten	mus musculu	29uqr0 homo sapien	052786 acinetobact	omo sapien	Q9nvp9 homo sapien	28wx33 homo sapien	mus muscul	Q949x8 arabidopsis	arabidopsi	09c8a6 arabidopsis	arabidopsis	rhizobium	Q8tks0 methanosarc	synechocys	
Description	Q9h8s1 homo	Q9d2v3 mus	Q9uqr0 h	052786 a	Q9h9d1 h	d 90vn90	Q8wx33 h	Q8vel6	0949x8	091ex9	Q9c8a6	Q8rv12	092p26	Q8tks0	055654	******
						-						•				
· QI	09н8S1	Q9D2V3	O9UORO	052786	09н9D1	69WP9	Q8WX33	Q8VEL6	0949x8	O9LEX9	09C8A6	Q8RVL2	Q92P26	Q8TKS0	055654	
DB	4	11	4	7	4	4	4	11	10	10	10	10	16	11	16	,
% Query Match Length DB	413	589	700	158	324	828	915	174	543	1857	2143	2151	282	299	374	
% Query Match	100.0	51.0	50.0	48.0	48.0	48.0	48.0	46.9	46.9	46.9	46.9	46.9	45.9	45.9	45.9	
Score		20	49	47	47	47	47	46	46	46	46	46	45	45	45	
Result No.	1	7	m	4	5	<b>و</b>	7	œ	đ	10	11	12	13	14	15	

ő

1 EKAPAHLSLPDPQALKRDV 19

ŏ

	Q94645 pseudomonas Q94644 aegolius fu Q93448 streptomyce Q42806 emericella Q8yrjl anabaena sp Q8u9e9 agrobacteri Q9ue9 agrobacteri Q9v8d5 cochliobolu Q9nkr0 leishmania Q27110 trichomonas Q96cm9 homo sapien Q19460 caenorhabdi Q91043 streptomyce
,	
008781 090503 090501 090502 092050 042142 042142 047592 097070 095764 095764 095764 096773 090933	09HTQ5 09DGQ4 09JJ48 042806 08YRJ1 08U9E9 09Y8D5 09Y8D5 09YRR0 027110 027110 096CM9
113 113 114 110 110 110 110	116 113 116 116 116 116
5560 9118 9118 9118 11808 1180 1180 1180 11	619 918 119 364 406 705 122 227 425
	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
NNNNN444444444444444444444444444444444	44 4 
110 110 110 110 110 110 110 110 110 110	

## ALIGNMENTS

							•			:	E	· ·															Gaps
				끍					:	Ë	ra Lra	1 .	ž														ĕ
				ţ					بر ا	ဓ္ဓ	awa	ğ,	<u>ء</u> ب	;													ó
				608					ZE	ช	Sns	ak.	Sa	g												3;	
				tel	OHIO				S	Ä	_:'	Ϊ,	:	asc			S									4	ls.
				四	## **				H	겁	≖ •	× .	자 : 턴	Σ.			ase								, 4	gth	Indels
	~	te)		ta;	dae				끃.	atc	ouo,	ĕ,	awa.	×		•	ta							Ì	5	Гег	
	late.	ıpqa		bra	ini				)tsr	Shir.		; ;		ari		•	de G								EC		90
<b>S</b>	Last sequence update)	Last annotation update)		erte	Catarrhini; Hominidae; Homo.				:	:	œ',	٠ و	ທ່.	agal			OB OB				٠			1	631	Score 98; DB 4; Length 413;	Pred. No. 7.9e-U8; Mismatches 0;
413 AA.	ce	ıt iç		×	ij;				H	S	Ή,	ka.	jų:	ž		٠	ž								44B)		che.
	Juer Juer	ot g		ta	chir				yame	yand	ğ,	ğ.	Ĥ,	H	,	= .	nBaı						Į,	::	67.A	86	ag K
	9 8	anı		ania	tarı				ugi	Suc	-:	•	Ŀ	ura		ect	ē.		•	SeA			NO.	ار چ	E37	ore	ed. Misi
PRT;	ast	ast		Ü	Sa				į,	Ή.,	ı K	ୟ ଓ	Ħ.	kam		Ę.	Ā			1pa			DNK	K.	0	Sc	Pred. No. /. 0; Mismatches
				nomo sapiens (momen). Eukarvota: Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;	Mammalia; Eutheria; Primates;				Isogai T., Ota T., Hayashi K., Sugiyama T., Otsuki T., Suzuki Y.,	Nishikawa T., Nagai K., Sato H., Sugano S., Shiratori A., Sudo H.,	Wagatsuma M., Hosoiri T., Kaku Y., Kodaira H., Kondo H., Sugawara	Chiba Y., Ishida S., Murakawa K., Ono Y., Takiguchi	Watanabe S., Kimura K., Murakami K., Ishii S., Kawai Y., Saito K.,	Wakamatsu A., Nakamura Y., Nagahari K., Masuho Y.,		"NEDO human cDNA sequencing project.";	Submitted (AUG-2000) to the EMBL/GenBank/DDBJ databases.		IPRO00118; Granulin	IPR001211; PhospholipaseAZ.		,	PROSITE; PS00799; GRANULINS; UNKNOWN_4	PS00118; PA2_HIS; UNKNOWN_I.	44132 MW; 0E3767A44BE314EC CRC64;	·	,° #
	16,	21,		rda	mat			Ä,	shi	Sa	:	H	X	Ä.	::	cin.	\$	5.1	aun	osb	4	4	LI.	is:	32	100.08;	100.0%; tive
PRELIMINARY;	el:	е1.		$^{ m cho}_{\cdot}$	Pri			TISSUE-OVARIAN CARCINOMA;	aya	χ.,	E+ •++:	χ.	Υ.	ns.	Iwayanagi T.;	nen	\$	EMBL; AK023348; BAB14535.1;	9	<u>.</u> ۲	Pfam; PF00396; granulin; 4.	4		7 H	441	10	llarity 100 Conservative
MIN	BL	BLr.	ein	a;	a;			RCI	Η,	ai	oir.	pa	ra	mat	ana	sed	6	AB1	18	11;	ann	RA!	Ü	ď	.,		Y
PRELIMINARY	Tremerel	TrEMBLrel.	Fot	azo	eri	م	Z	S	Ë	Nag	HOS	E C	ET.	laka	way	ΚX	-20	≖ 	00	017	Б.	ا	66	18	413 AA;		ırıt
		٤,	OVARC1001154 protein.	Met	uth	NCBI_TaxID=9606;	[1] SECTIFICE FROM N.A.	IAN	ota	.:	<u>:</u>	:	χ,	· .	ч,	당.	AUG	348	PRO	PRO	96;	SMART; SM00277; GRAN;	000	000	413	:	5 E
1 1 2948S1 2948S1;	01 - MAR - 2001 01 - MAR - 2001	01-JUN-2002	115	, e		å	G.	VAR		Ē	el E	Takahashi M.,	Š.	Yamamoto J.,	Ninomiya K.,	man	<u>ੁ</u>	023		::	003	8	P.		6.5	_	al Sim 19;
	4 4 2 4	-N	100	vor	ijia	Tax.	N.	E-C	1	kay	E CE	ash	ape	otc	ıiya	겵	ţţ	Z	InterPro;	InterPro;	E.	رب ت	Œ;	PROSITE;	SEQUENCE	tch	g]
T 1 1 09H8S1 09H8S1;	2	B	A A R	kar	mma	H.	- <u>E</u>	SSC	gods	shi	ıgat	ka	ıtar	tman	loo!	Ē	T MQI	Œ,	tei	ţe.	am'	(AR	SS	SS	Ö.	×	ğ Ž
F125	55	07	ó i	, G	X	ž	_ 5	E	Ĩ	Z	W	Ë	×	Ϋ́	Z	Ĩ	์ ග	đ	Ħ	ĦÌ	ā	Ś	ď	2	ŝ	Query Match	Best Local Similarity Matches 19; Conserva
RESULT 09H8S1 ID 00 AC 00	3 5	텀	E S	3 8	8	ž.	R Z	ပ္ထ	æ	Æ	æ	æ	Æ	RA	Æ	RI	Z.	Z,	DR	ద్ద	Ä	DR.	絽	Ä	g	ð	ăÿ
m () () ()	- 1	1		_		_		_		_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	•		•

```
Q9H9D1;
01-MAR-2001 (TrEMBLrel. 16, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Hypothetical protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRAIN-ATCC 17906;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=29430;
 NCBI_TaxID-9606;
                                                                                                                                                                                                         EMBL; Y18004
                                                                                                                                                                              Heath P.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                          SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                             InterPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  052786 052786;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NON TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   09H9D1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 5
09H9D1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 4
    出る記
                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                               A Rawai J., Shinagawa A., Shibata K., Yoshino M., Itoh M., Ishii Y., A Arakawa T., Hara A., Shibata K., Yoshino H., Adachi J., Fukuda S., A Arakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S., A Alzawa T., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I., Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R., Radota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T., Relischmann W., Gaasterland T., Gissi C., King B., Kochiwa H., Ruehl P., Lewis S., Matsuo Y., Nikaido I., Reochiwa H., Rohil D., Lewis S., Matsuo Y., Nikaido I., Reochiwa H., Rakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G., Barai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G., Barai K., Okido T., Furuno M., Romita M., Gariboldi M., Gariboldi M., Gustincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N. H., Lyons P., Marchlonni L., Mashima J., Mazzarelli J., Nombaerts P., Nordone P., Ring B., Ringwald M., Rodiguez I., Sakamoto N., Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F., Shunashi Yan Nyashaw-Boris A., Yoshida K., Hasegawa Y., Kawaji H., Kohtsuki. S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                  Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
NCBI_TaxID-10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-MAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
SCML2 protein (DJ112946.1) (sex comb on midleg (Drosophila)-like
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Hayashizaki Y.; "Functional annotation of a full-length mouse cDNA collection."; Nature 409:685-690(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                            01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
Adult male kidney CDNA, RIKEN full-length enriched library,
clone:0610012H06, full insert sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 50; DB 11; Length 589;
Pred. No. 8.7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PS00799; GRANULINS; 7.
PS00118; PA2_HIS; UNKNOWN_1.
589 AA; 63405 MW; IDE8229C413CA292 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    700 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; AKO18744; BAB31384.1; -.
MGD; MGI:95832; Grn.
InterPro; IPRO00118; Granulin.
InterPro; IPRO01211; PhospholipaseA2.
Pfam; PF00396; granulin; 7.
SWART; SM00277; GRAN; 7.
                                                                                                               Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRT;
                                                                                                                                                                                                                                                                                                        STRAIN-C57BL/6J; TISSUE-KIDNEY;
MEDLINE-21085660; PubMed=11217851;
 166 EKAPAHLSLPDPQALKRDV 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 EKAPAHLSLPDPQALKRD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q9UQRO; Q9UGC5;
01-MAY-2000 (TrEMBLrel. 13,
01-MAY-2000 (TrEMBLrel. 13,
01-JUN-2002 (TrEMBLrel. 21,
                                                                                                            01-JUN-2001 (TrEMBLrel. 17,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity 61.1
Matches 11; Conservative
                                                                              PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens (Human).
                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q900R0
                                                                              Q9D2V3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SCML2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 2
                                                             Q9D2V3
셤
                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
```

```
Bode C.E., Brabetz W., Brade H.; "Cloning and characterization of 3-deoxy-D-manno-oct-2-ulosonic acid (Kdo) transferase genes (kdtA) from Acinetobacter baumannii and
                           Montini E., Buchner G., Spalluto C., Andolfi G., Caruso A., de Dunnen, J.T., Trump D., Rocchi M., Ballabio A., Franco B.; aldentification of ScHL2, a Second Human Gene Homologous to the Drosophila Sex comb on midleg (Scm): a New Gene Cluster on Mp22.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bacteria; Proteobacteria; gamma subdivision; Moraxellaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       48.0%; Score 47; DB 2; Length 158; 52.4%; Pred. No. 6.3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 700;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                  Submitted (JAN-2000) to the EMBL/GenBank/DDBJ databases EMBL; Y18004; CAB38943.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SM00454; SAM; 1.
CE 700, AA; 77256 MW; 05E086D4928DEE73 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          158 AA; 18399 MW; 81DA3A64E5152268 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-JUN-1998 (TrEMBLrel. 06, Last sequence update) 01-MAR-2002 (TrEMBLrel. 20, Last annotation update) Hypothetical 18.4 kDa protein (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Acinetobacter haemolyticus.";
Eur. J. Blochem. 254:404.412(1998).
EMBL: 256927; CAB09655.1;
-Interpro: IRF002106; AATRIN.LIGASELI..
PROSITE; PS00339; AA_TRNA_LIGASE_II_2; UNKNOWN_1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ouery Match 50.0%; Score 49; DB 4; Best Local Similarity 43.8%; Pred. No. 15; Matches 7; Conservative 7; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 158 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           324 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-JUN-1998 (TrEMBLrel. 06, Created)
01-JUN-1998 (TrEMBLrel. 06, Last seq
01-MAR-2002 (TrEMBLrel. 20, Last ann
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRT;
MEDLINE-99265973; PubMed-10331946;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 EKAPAH--LSLPDPQALKRDV 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE-98321635; PubMed-9660198;
                                                                                                                                                                                                                                                                                                    EMBL; Y18004; CAB38943.1; -.
EMBL; AL096763; CAB65926.1; -.
                                                                                                                                                                                                           SEQUENCE OF, 245-700 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                607 EAPSYIAVPDPSVLKQ 622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2 KAPAHLSLPDPQALKR 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Acinetobacter haemolyticus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11; Conservative
                                                                                                                                             Genomics 58:65-72(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                     InterPro; IPR004092; Mb
                                                                                                                                                                                                                                                                                                                                                                                                          Pfam; PF02820; mbt; 2.
Pfam; PF00536; SAM; 1.
```

```
Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Hypothetical protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID-10090;
                                                                                                                                                                                                                                                          SEQUENCE
                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0949X8
. 0949X8;
                                                                                                                                                                                                                                            NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 9
                                                                                                                                                                                                                                                                                                                                                                                                         RESULT (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0949x8
11D 09
AC 099
DT 011
DT 011
DE PU
GGN F7
OC EU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Isogai T., Ota T., Hayashi K., Sugiyama T., Otsuki T., Suzuki Y., Nishikawa T., Nagai K., Sugano S., Takahashi-Fujii A., Hara H., Nahasa T., Nomura Y., Togiya S., Komai F., Hara R., Takeuchi K., Arita M., Nabekura T., Ishii S., Kawai Y., Saito K., Tamamoto J., Wakamatsu A., Nakamura Y., Nagahari K., Masuho Y., Oshima A.; Submitted (FEB-2000) to the EMBL, ROBBJ databases.

EMBL; AKO01456; BAA91701.1; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
                                                                    Euteleostomi;
Homo.
                                                                                                                                    Isogai T., Ota T., Hayashi K., Sugiyama T., Otsuki T., Suzuki Y., Nishikawa T., Magai K., Sugano S., Takahashi-Fujii A., Hara H., Tanase T., Nomura Y., Togiya S., Komai F., Hara R., Takeuchi K., Arita M., Nabekura T., Ishii S., Kawai Y., Saito K., Yamamoto J., Wakamatsu A., Nakamura Y., Nagahari K., Masuho Y., Oshima A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                   ö
  01-WAR-2001 (TrEMBLrel. 16, Last sequence update)
01-WAR-2001 (TrEMBLrel. 16, Last annotation update)
CDNA FLJ12840 fis, clone NT2RP2003277, weakly similar to NAM7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     48.0%; Score 47; DB 4; Length 828; 52.9%; Pred. No. 39;
                                                                                                                                                                                                                                                                      Length 324;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eutel
Mammalla; Eutherla; Primates; Catarrhini; Hominidae; Homo
                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                      "NEDO human cDNA sequencing project.";
Submitted (AUG-2000) to the EMBL/GenBank/DDBJ databases.
EMBL; AK02209; BAB14299-1; -
SEQUENCE 324 AA; 35932 MW; EDBEA2D23EC145F4 CRC64;
                                                                    Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, I
Mammalia, Eutheria, Primates, Catarrhini, Hominidae,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                      Score 47; DB 4;
Pred. No. 14;
2; Mismatches 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     915 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BA479K20.2 (KIAA0625 protein) (Fragment)
BA479K20.2 OR KIAA0625.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDNA FLJ10594 fis, clone NT2RP2004689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-WAR-2002 (TrEMBLrel. 20, Created)
01-WAR-2002 (TrEMBLrel. 20, Last seq
01-JUN-2002 (TrEMBLrel. 21, Last ann
                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-OCT-2000 (TIEMBLREN: 15, Created)
01-OCT-2000 (TIEMBLREN: 15, Last seq
01-DEC-2001 (TIEMBLREN: 19, Last ann
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ERPPVHDQLQDPRLLKR 695
                                                                                                                                                                                                                                                                                                                                            |: | | | ||: |||
175 ERPPVHDQLQDPRLLKR 191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 EKAPAHLSLPDPQALKR 17
                                                                                                                                                                                                                                                                                                                           1 EKAPAHLSLPDPQALKR 17
                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity 52.9%;
Matches 9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                        PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
                                                       Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Local Similarity
Matches 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ICBI_TaxID-9606;
                                                                                               NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                           protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     08WX33
                                                                                                                                                                                                                                                                                                                                                                                                                       99WP9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 7
08WX33
                                                                                                                                                                                                                                                                                                                                                                                               RESULT 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SSEEPPRE
     a
                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   요
```

```
Arabidopsis thaliana (Mouse-ear cress).
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnollophyta; eudicotyledons; core eudicots; Rosidae;
                                                                                                                       Ishikawa K., Nagase T., Suyama M., Miyajima N., Tanaka A., Kotani H., Nomura N., Ohara O.;
"Prediction of the coding sequences of unidentified human genes. X. The complete sequences of 100 new cDNA clones from brain which can code for large proteins in vitro.";
DNA Res. 5:169-176(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 174;
                                                                                                                                                                                                                                                                                                                                                                                                                        Match
Local Similarity 52.9%; Pred. No. 44;
Local Similarity 52.9%; Pred. No. 44;
Local Similarity 52.9%; Pred. No. 44;
Local Similarity 52; Mismatches 64; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Strausberg R.;
Submitted (DEC-2001) to the EMBL/GenBank/DDBJ databases.
EMBL; BC018234; AAH18234.1; -.
Submitted (DEC-2001) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                         915 AA; 104041 MW; 3CAC94C174C9A677 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NON_TER 1 1 1 SEQUENCE 174 AA; 20018 MW; 75250AD38F86A088 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-DEC-2001 (TrEMBLrel. 19, Created)
01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
01-MAR-2002 (TrEMBLrel. 20, Last annotation update)
Putative n-calpain-1 large subunit (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 46; DB 11;
Pred. No. 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 174 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             543 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-MAR-2002 (TrEMBLrel. 20, Last sequence
01-MAR-2002 (TrEMBLrel. 20, Last annotati
Hypothetical 20.0 kba protein (Fragment)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                         MEDLINE-98403880; PubMed-9734811;
                                                                                                                                                                                                                                                                                              EMBL; AL159997; CAD13341.1; -. EMBL; AB014525; BAA31600.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 EKAPAHLSLPDPQALKR 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE OF 125-915 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               46.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4 PAHLSLPDPQALKRDV 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q8VEL6 PRELIMINARY;
Q8VEL6;
01-MAR-2002 (TrEMBLrel. 20,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ouery Match
Best Local Similarity 50.v.
```

us-09-824-647-6.rspt

SEQUENCE

SET WE WE WANTED ON THE SET OF SET OF

Q9LEX9 RESULT 10 Q9LEX9

a

ä

```
Theologis A., Ecker J. S., Pala C.J., Federspiel N.A., Kaul S., White O., Alonso J., Altafi H., Araujo R.) Bowman C.L., Brooks S.Y., Buchler E., Chan A., Chao Q., Chen H., Cheuk R.F., Chin C.W., Chung M.K., Conn L., Conway A.B., Conway A.B., Creasy T.H., Dewar K., Chung M.K., Conn L., Conway A.B., Conway A.B., Conway T.H., Dewar K., A. Dunn P., Etguip., Feldblyum T.V., Feng J.-D., Fong B., Fulis C.Y., A. Gill J.E., Goldsmith A.D., Haas B., Hansen N.F., Hughes B., Huizar L., A. Hunter J.L., Jenkins J., Johnson-Hopson C., Khan S., Khaykin E., Langin-Hooper S., Lee J.M., Lenz C.A., Li J.H., Li Y.-P., Lin X., Liu S.X., Liu Z.A., Luros J.S., Maiti R., Marziall A., Lin X., Liu S.X., Liu Z.A., Luros J.S., Maiti R., Marziall A., Sakano H., Salzerg S.L., Schwartz J.R., Shinn P., Southwick A.M., Sakano H., Salzerg S.L., Schwartz J.R., Shinn P., Southwick A.M., Wu D., Yu G., Fraser C.M., Verter J.C., Davis R.W.;

"Sequence and analysis of chromosome 1 of the plant Arabidopsis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Calpain-like protein.
Arabidopsis thaliana (Mouse-ear cress).
Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Bukaryota; Viridiplantae; Streptophyta; eudicotyledons; core eudicots; Rosidae;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae;
eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Trachepphyta;
Spermatophyta; Magnollophyta; eudloctyledons; core eudlocts; Rosidae;
eurosids II; Erassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TISSUE-DEVELORING SEED;
PubMed=11929961;
Lid S.E., Gruis D., Jung R., Lorentzen J.A., Ananiev E.,
Chamberlin M. Niu X., Meeley R., Nichols S., Olsen O.A.;
The defective kernel 1 (dekl) gene required for aleurone cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 46; DB 10; Length 21
Pred. No. 1.6e+02;
2; Mismatches 3; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRINTS; PR00704; CALPAIN.
SMARY; SM00230; CYSPC; 1.
PROSTIE; PS00139; THIOL, PROTEASE_CYS; 1.
SEQUENCE 2143 Aa; 236779 WW; B91A15081AF26EC2 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-UUN-2002 (TrEMBLrel. 21, Created)
01-JUN-2002 (TrEMBLrel. 21, Last sequence update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
                                                             (TrEMBLrel. 17, Last sequence update) (TrEMBLrel. 21, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT; 2151 AA
                                  (TrEMBLrel. 17, Created)
                                                             01-JUN-2001 (TrEMBLrel. 17, Last segol-JUN-2002 (TrEMBLrel. 21, Last ann N-calpain-1 large subunit, putative.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Nature 408:816-820(2000).
EMBL; AC027034; AG51565.1; -
InterPro; IPR001300; Protease_C2.
Interpro; IPR000169; SHprot_acsite.
Pfam; PF01067; Calpain_III; I.
Pfam; PF00648; Peptidase_C2; I.
                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
STRAIN-CV. COLUMBIA;
MEDLINE-21016719; PubMed-11130712;
                                                                                                                                                                   F7A10.23.
Arabidopsis thaliana (Mouse-ear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  46.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         111: | | | :||
372 HLSITDPSAARRD 384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6 HLSLPDPQALKRD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity 61.5
nes 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=3702;
                                                                                                                                                                                                                                                                                                                         NCBI_TaxID-3702;
                                  01-JUN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q8RVL2
ID Q8RVL2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QBRVL2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SON DER REPARE DER REP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Arabidopsis thaliana (Mouse-ear cress).
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae;
eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                        Goldsmith A.D., Jiang P.X., Benh J., Banno F., Dale J.M.,
Goldsmith A.D., Jiang P.X., Lee J.M., Onodera C.S., Quach H.L.,
Tang C., Toriumi M., Yamamura Y., Yu G., Yu S., Bowser L.,
Tang C., Toriumi H., Cheuk R., Hayashizaki Y., Ishida J., Jones T.,
Kaminci P., Chen H., Cheuk R., Hayashizaki Y., Ishida J., Jones T.,
Kamiya A., Karlin-Neumann G., Kawai J., Kim C., Koesema E., Lam B.,
Lin J., Meyers M.C., Miranda M., Narusaka M., Nguyen M., Palm C.J.,
Sakurai T., Satou M., Seki M., Shinn P., Southwick A., Tracy S.E.,
Full Length cDNa of gene F7A10.23 (GI:12323169).";
Submitted (AUG-2001) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SECUENCE FROM N.A. Chottler P., Wincker P., Cattolico L. Choisne N., Robert C., Brottler P., Wincker P., Cattolico L. Artiguenave F., Saurin W., Weissenbach J., Mewes H.W., Rudd Lemcke K., Mayer K.F.X., Quetler F., Salanoubat M.; Submitted (JUN-2000) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 1857;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 46; DB 10; Length 543;
Pred. No. 36;
2; Mismatches 3; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                46.9%; Score 46; DB 10; Length 18
52.9%; Pred. No. 1.4e+02;
ive 3; Mismatches 5; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DOE91EFDCF5B6F73 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EU Arabidopsis sequencing project;
Submitted (JUN-2000) to the EMBL/GenBank/DDBJ databases.
ENBL; A31389732; CAB94128.1; -.
InterPro; IRR000409; Beige_BEACH.
Pfam; PF02138; Beach; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            543 AA; 59467 MW; FB988FE03FD3AD48 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-OCT-2000 (TrEMBLrel. 15, Created)
01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
Hypothetical 203.1 kDa protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT; 2143 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRT; 1857 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ProDom; PD007848; Beige_BEACH; 1.
PROSITE; PS50197; BEACH; 1.
Hypothetical protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1857 AA; 203121 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    :|||| : | | :||
1336 EAPAHPAPPAPPERRD 1352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2 KAPAHLSLPDPQALKRD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity 61.5%;
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |||: || | :||
337 HLSITDPSAARRD 349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity 52.9°
Matches 9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                           InterPro; IPR002110; ANK. SMART; SM00248; ANK; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6 HLSLPDPQALKRD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ANK repeat; Repeat.
NON_TER 543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID=3702;
NCBI_TaxID=3702;
```

SEQUENCE

Q9C8A6 ID Q9C8A6

RESULT 11

ò a

ö

Gaps

ö

Length 2143;

```
Galagan J.E., Nusbaum C., Roy A., Endrizzi M.G., Macdonald P., FitzHugh W., Calvo S., Engels R., Smirnov S., Athoor D., Brown A., Allen N., Naylor J., Stange-Thomann N., DeArellano K., Johnson R., Linton L., McEwan P., McKeran K., Talamas J., Tirrell A., Ye W., Zimmer A., Barber R.D., Cann I., Graham D.E., Grahame D.A., Guss A.M., Hedderich R., Ingram-Smith C., Kuettner H.C., Krzycki J.A., Edgh J.A., Li W., Liu J., Mukhopadhyay B., Reeve J.N., Smith K., Springer T.A., Umayam L.A., White O., White R.H., de Macarlo E.C., Ferry J.G., Jarrell K.F., Jing H., Macario A.J.L., Paulsen I., Metcalf W.W., Birren B., Metcalf W.W., Birren B., The genome of Methanosarcina acetivorans reveals extensive metabolic
                                                                                                                                                          STRAIN=C2A / ATCC 35395 / DSM 2834;
MEDLINE-21929760; PubMed-11932238;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match.
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRAIN-PCC 6803;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Rypothetical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            rabata S
                                                                                                                                                                                                                                                                                                                                                          055654
                                                                                                                                                                                                                                                                                                                                      RESULT 15
                                                                                                                                                                                                                                                                                                                                                055654
                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                            ö
                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                    R01970 OR SMC04315.
Rhizobium mellloti (Sinorhizobium mellloti).
Bacteria; Proteobacteria; alpha subdivision; Rhizobiaceae group;
Rhizobiaceae; Sinorhizobium.
 development in the endosperm of maize grains encodes a membrane protein of the calpain gene superfamily "; proc. Natl. Acad. Sci. U.S.A. 99:5460-5465(2002). EMBL; AY061803; AAL38186 1; SEQUENCE 2151 AA; 238262 WW; 50D571D7446A5609 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                            ö
                                                                   Score 46; DB 10; Length 2151;
Pred. No. 1.6e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 45; DB 16; Length 282;
Pred. No. 25;
1; Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Archaea; Euryarchaeota; Methanococci; Methanosarcinales; Methanosarcinaceae; Methanosarcina.
                                                                                           3; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             282 AA; 30379 MW; B9F223D63CE788B7 CRC64;
                                                                                                                                                                                                                                 Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pfam; PF03466; LysR_substrate; 1.
PROSITE; PS00044; HTH_LYSR_FAMILY; UNKNOWN_1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              299 AA
                                                                                                                                                                                               282 AA.
                                                                                            2; Mismatches
                                                                                                                                                                                                                                                       Putative transcription regulator protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Created)
                                                                                                                                                                                                                      Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRT;
                                                                                                                                                                                               PRT;
                                                                                                                                                                                                                                                                                                                                                          MEDLINE-21396507; PubMed-11481430;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   45.9%;
80.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (TrEMBLrel. 21, C
(TrEMBLrel. 21, I
(TrEMBLrel. 21, I
                                                                   Query Match 46.9%;
Best Local Similarity 61.5%;
Matches 8; Conservative
                                                                                                                                                                                                                   01-DEC-2001 (TrEMBLrel. 19, 01-DEC-2001 (TrEMBLrel. 19, 01-JUN-2002 (TrEMBLrel. 21,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Hypothetical protein MA3328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Methanosarcina acetivorans
                                                                                                                               111: || | :||
337 HLSITDPSAARRD 349
                                                                                                                 6 HLSLPDPQALKRD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRELIMINARY;
                                                                                                                                                                                               PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1:11111 |1
241 ERAPAHLGLP 250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 EKAPAHLSLP 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pfam; PF00126; HTH_1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            [1]
SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Complete proteome
                                                                                                                                                                                                                                                                                                               NCBI_TaxID=382;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-JUN-2002
01-JUN-2002
01-JUN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q8TKSO;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q8TKS0
                                                                                                                                                                                               Q92P26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 14
08 TKSO
0 OFTKSO
0 OGTKS
DT 01-JU
DT 01-JU
DT 01-JU
DE HYPOT
GN MATA33
OC Arch
CO Neth
COC Neth
COC NET
RN (1)
RP SEQUI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           fatches
                                                                                                                                                                         RESULT 13
                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
    SORT
                                                                                                                  ð
                                                                                                                                      셤
```

```
Kaneko T., Sato S., Kotani H., Tanaka A., Asamizu E., Nakamura Y.,
Miyajima N., Hirosawa M., Sugiura M., Sasamoto S., Kimura T.,
Hosouchi T., Matsuno A., Muraki A., Nakazaki N., Naruo K., Okumura S.,
Shimpo S., Takeuchi C., Wada T., Watanabe A., Yamada M., Yasuda M.,
                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "Sequence analysis of the genome of the unicellular cyanobacterium Synechocystis sp. strain PCC6803. II. Sequence determination of the entire genome and assignment of potential protein-coding regions.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sugiura M., Tabata S.;
"Sequence analysis of the genome of the unicellular cyanobacterium Synechocystis Sp. strain PCC6803. I. Sequence features in the 1 Mb region from map positions 64% to 92% of the genome.";

NAM Res. 2:153-166(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE-96127529; PubMed-8590279;
Kaneko T., Tanaka A., Sato S., Kotani H., Sazuka T., Miyajima N.,
                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 374;
              45.9%; Score 45; DB 17; Length 299; 56.2%; Pred. No. 27; ive 2; Mismatches 5; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Submitted (AUG-1995) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      11 protein; Complete proteome.
374 AA; 42416 MW; 99D408A4D0BDA50F CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Synechocystis sp. (strain PCC 6803).
Bacteria; Cyanobacteria; Chroococcales; Synechocystis.
NCBI_TaxID=1148;
                                                                                                                                                                                                                                                                                                                                                                                                                 Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 45; DB 16;
Pred. No. 35;
                                                                                                                                                                                                                                                                                                                                   374 AA.
                                                                                                                                                                                                                                                                                                                                                                                          01-NOV-1996 (TrEMBLrel. 01, Created)
                                                                                                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE-97061201; PubMed-8905231;
                                                                                                                                                                                                                                                                                                                                                                                               ul-NOV-1996 (TrEMBLEEL. 01, C. 01-MAR-2002 (TrEMBLEEL. 20, L. Hypothetical protein slr0358. SLR0358.
                                                                                                                                                                    || || :|:|| ||
281 EKYPALFEVPEPQDLK 296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                50.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; D64000; BAA10174.1; -.
                                                                                                                                    1 EKAPAHLSLPDPQALK 16
Query Match
Best Local Similarity 56.27
Conservative
                                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3:109-136(1996)
```

us-09-824-647-6.rspt

;

0; Gaps

5; Indels

2; Mismatches

7; Conservative

Matches

2 KAPAHLSLPDPQAL 15: :| || || || || : 339 RPPVHLDLPDPSKM 352

0y 0p

Search completed: July 8, 2003, 16:28:02 Job time: 42.9231 secs

Page 6

```
GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
```

- protein search, using sw model OM protein July 8, 2003, 16:08:55; Search time 35 Seconds Run on:

(without alignments) 53.300 Million cell updates/sec

US-09-824-647-7 74 Title: Perfect score:

1 ARRGIKCLRREAPR 14 Sequence:

Scoring table:

BLOSUM62 Gapop 10.0 , Gapext 0.5

Searched:

Total number of hits satisfying chosen parameters:

908470 segs, 133250620 residues

Minimum DB seq length: 0 Maximum DB seq length: 2000000000

Listing first 45 summaries Post-processing: Minimum Match 0% Maximum Match 100%

Database :

/SIDS2/gcgdata/geneseq/genesegp-emb1/AA1982. /SIDS2/qcqdata/geneseq/genesegp-emb1/AA198 //gcgdata/geneseq/geneseqp-embl A\_Geneseq\_101002:\*

/SIDS2/gcgdata/geneseg/genesegp-embl/AA2000.DAT:\*/SIDS2/gcgdata/geneseg/genesegp-embl/AA2001.DAT:\*/SIDS2/gcgdata/geneseg/genesegp-embl/AA2002.DAT:\* /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1984.DAT: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1985.DAT: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1986.DAT: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1987.DAT: /gcgdata/geneseq/geneseqp-embl/AA1989 /SIDS2/gcgdata/geneseg/genesegp-embl/AA1988 /SIDS2/gcgdata/geneseq/geneseqp-embl/AA199: /SIDS2/gcgdata/geneseq/geneseqp-emb1/AA199 /SIDS2/gcgdata/geneseq/geneseqp-embl /SIDS2/gcgdata/geneseq/geneseqp-embl /SIDS2/gcgdata/geneseq/genesegp /SIDS2/gcgdata/geneseq/ /gcgdata/geneseg/ /SIDS2/gcgdata/geneseg/ /SIDS2 /SIDS2

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

#### SUMMARIES

		P				
Result		Query				
No.	Score	Match	Match Length DB ID	DB	A .	Description
-	74	100.0		20		Human GP88 autocri
7	74	100.0		14	AAR48673	Granulin sequence.
m	74	100.0	٠	20	AAW85475	Human GP88 autocri
4	74	100.0		23		Human granulin/epi
S	68	91.9		22		Human protein sequ
9	68	91.9	593	12	AAR14326	Human epithelin pr
7	68	91.9		21		Human cancer assoc
8	53	71.6		20		Mouse GP88 autocri
6	53	71.6		12		Mouse epithelin pr
10	53	71.6		50		Mouse GP88 autocri

Mouse granulin/epi Rat epithelin prec Propionibacterium Granulin E. Homo	Herbicidally active Rerbicidally active Zea mays protein f Propionibacterium Propionibacterium Propionibacterium Novel human diagno	Flavobacterium ker Ruman nucleotide p Propionibacterium Mouse neuro-growth Mutha profesin 1so Mouse TANGO 125 (T	Mouse T125 (TANGO- Mouse neuro-growth Mouse Notch4-11ke Propionibacterium Propionibacterium Novel human enzyme	human strai human onibac strai	Novel human diagno Novel human diagno Human polypeptide Human macro protei Novel human diagno
		Ę	, V <sub>i</sub>		
AAE20520 AAR14325 AAU48409 AAR41885	ABB92875 AAG40366 AAU63381 AAU43048 AAU47116	AAY23754 AAY23754 AAW88397 ABB72368 AAY52141		AAU21798 AAW72069 AAU21670 AAU46132 AAW72214 AAW67755	ABG30299 ABG24248 AAM39448 AAM39447 ABB84252 ABG05609
23 22 14	555555	23 23 23 23	5555555	265556	535555
589 589 101 56	113 1083 88 55 64 76	422 1156 83 255 255 275	275 278 278 299 70	119 131 137 182 302 306	621 655 737 761 761
71.6 68.9 62.2 58.1		52.7 52.7 52.7 52.7	52.7.7.2.0 52.7.7.7.7.7.7.7.7.7.7.7.7.7.7.7.7.7.7.7	51. 51.2 51.4 4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.	51.4 51.4 51.4 51.4 51.4
53 44 43 43	4 0 0 4 4 0 4 0 0 0 0 0 0 0 0 0 0 0 0 0	44666 0000000	0000 W 88 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	& & & & & & & & & & & & & & & & & & &	& & & & & & & & & & & & & & & & & & &
11 12 13 14	7 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	222222 222222	33 33 33 33 33 33 33 33 33 33 33 33 33	# 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	44444 4444 543

## ALIGNMENTS

GP88; granulin; epithilin; human; growth factor; autocrine; tumour; cancer; viral infection; antagonist; therapy; diagnosis; antigen; antibody. Human GP88 autocrine growth factor antigenic peptide Al4R. AAW85481 standard; Peptide; 14 AA. 15-MAR-1999 (first entry) AAW85481; RESULT 1 

Homo sapiens.

WO9852607-A1.

26-NOV-1998.

98WO-US10555. 22-MAY-1998;

97US-0991862 97US-0863079 16-DEC-1997; 23-MAY-1997;

(SERR/) SERRERO G.

Serrero G;

WPI; 1999-045276/04.

Composition containing antagonist of growth factor GP88 - useful for treating cancer and viral diseases and also for diagnosing disease

ð

```
Best_Local Similarity
Matches 14; Conserv
593 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  (SERR/) SERRERO G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               593 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       N-PSDB; AAV82825
                                                                                                                                                                                                                                                                                                                                                                                             22-MAY-1998;
                                                                                                                                                                                                                                                               Homo sapiens
                                                                                                                                                                                                                                                                                                                                                    WO9852607-A1
                                                                                                                                                                                                                                                                                                                                                                                                                   16-DEC-1997;
23-MAY-1997;
                                                                                                                                                                                                                                                                                                                                                                         86-NOV-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Serrero G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                              AAW85475;
 Sequence
                    Query Match
                                                                                                                                                                                                                                                                                      Key
Peptide
                                                                                                                                                                                                                                                                                                                     Peptide
                                                                                                                   RESULT 3
                                                                                                                                                               င္ဖ
                                                                                   g
                                                                ð
                                                                                                                                                                                                                                          ö
                                       This is the amino acid sequence of peptide A14R, comprising amino acid residues A56-R579 of human GPB8 (see AAM85475). GPBB is an 88 kDa glycoprotein autocrine growth factor that is expressed in a tightly regulated manner in normal cells, is overexpressed and unregulated in highly tumorigenic cells derived from normal cells, and which acts as a stringently regulared growth stimulator for the tumorigenic cells. A14R was used in an attempt to raise neutralising antibodies to GPB8 (see also AAW85480). Antagonists to GPB8, such as anti-GPB8 antibodies, are used to treat diseases associated with increased expression of GPB8, particularly cancer but also viral infections. Anti-GPB8 antibodies can also be used
                                                                                                                                                              diagnostic reagents and to deliver toxins or other compounds to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The granulin inhibits keratinocytes and is useful in formulations for promoting the healing of wounds.
                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New cystine rich granulin peptide(s) from leucocyte(s) - are keratinocyte inhibitors useful topically for wound healing
                                                                                                                                                                                                                                                                                                                                                                                                                             Granulin; keratinocytes; wound healing; inhibition; peptide; granulocytes; leucocytes.
                                                                                                                                                                                                                  100.0%; Score 74; DB 20; Length 14; 100.0%; Pred. No. 3.5e-06; Live 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "Glycine encoded by CAG."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note= "Valine encoded by ATG."
539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Disclosure; Figure 4c; 53pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers Misc-differeed 452
                                                                                                                                                                                                                                                                                                                                         AAR48673 standard; Protein; 593 AA.
                      Page 45; 86pp; English.
from altered GP88 expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           92WO-CA00089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                920S-0829233
                                                                                                                                                                                                                                                                           1 ARRGIKCLRREAPR 14
                                                                                                                                                                                                                                                               1 ARRGTKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                         14; Conservative
                                                                                                                                                                         GP88-expressing cells
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 1993-320328/40.
                                                                                                                                                                                                                    Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                        Granulin sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (SOLO/) SOLOMON S.
                                                                                                                                                                                               14 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          N-PSDB; AAQ49052.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28-FEB-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                03-FEB-1992;
                                                                                                                                                                                                                                                                                                                                                                                   22-APR-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO9315195-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      05-AUG-1993,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Solomon S;
                                                                                                                                                                                                                                                                                                                                                                AAR48673;
                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                  RESULT 2
AAR48673
ID AAR4
                                                                                                                                                                                                                                                                                                                                                    셤
```

```
:
0
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      glycoprotein autocrine growth factor and epithilin/granulin properties autocrine growth factor and epithilin/granulin precursor that is expressed in a tightly regulated manner in normal precursor that is expressed in a tightly regulated manner in normal cells, is overexpressed and unrequiated in highly tumorigenic cells derived from normal cells, and which acts as a stringently required growth stimulator for the tumorigenic cells. Inhibition of GP88 cepression or action in the tumorigenic cells. Inhibition of the tumorigenic properties of the overproducing cells. Antagonists to GP88 are used to treat diseases associated with increased expression of GP88, particularly cancer but also viral infections. Fragments of GP88 are used to raise specific antibodies (used as antagonists, as diagnostic reagents and for delivering toxins or other compounds to GP88-expressing cells) and to screen for antibodies. Methods are provided for diagnosing clisease, or determining susceptibility to disease, resulting from
                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Composition containing antagonist of growth factor GP88 - useful for treating cancer and viral diseases and also for diagnosing disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GP88; granulin, epithilin; human; growth factor; autocrine; tumour; cancer; viral infection; antagonist; therapy; diagnosis.
                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
340..364
//octe= "El9V peptide used to raise antibody"
//octe= "A14R peptide used to raise antibody"
Length 593;
                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            the amino acid sequence of human GP88, an 88 kDa
   DB 14;
0.00013;
hes 0;
                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                          -
      Score 74;
Pred. No. (
                                                                                                                                                                                                                                                                                                                                                          AAW85475 standard; Protein; 593 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human GP88 autbcrine growth factor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Example 5; Fig 9A; 86pp; English.
                                                                     ö
      100.0%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  from altered GP88 expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    98WO-US10555.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   970S-0991862.
970S-0863079.
                                                                                                                                                                        1 PRRGTKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15-MAR-1999 (first entry)
                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 1999-045276/04.
```

ð 윱

```
Matches
                                                                                                           a
                                                            ð
                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                human. The method comprises obtaining a biological sample containing cells from the patient, detecting GP88 in the cells of the sample, and determining the number of GP88 positive cells in the sample, and determining the ratio of GP88 positive cells to the total number of cells in the sample. The invention also relates to a method for determining if a human patient is resistant to the antineoplastic effects of antioestrogen therapy. The method is useful for diagnosing tumourigenicity in a sample, such as blood, serum, plasma, urine, nipple aspirate, cerebrospinal fluid, liver, kidney, breast, bone, brain, lung, collon, or akin cancer. The method can be used to treat or prevent re-occurrence of cancer in a patient, by administering tamoxifen if the sample contains less than 10 % GP88, or less than 5 % GP88 positive present.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             granulin precursor; GP88; cytostatic; tumourigenicity; tamoxifen; pplastic; antioestrogen therapy; skin cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Diagnosing tumorigenicity in a human, comprising obtaining a cell sample, detecting GP88 in the cells, and determining the number of GP88 positive cells in the sample -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The invention relates to a method for diagnosing tumourigenicity in a
                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            346..364
/note= "Region used as antigen to develop anti-human
GP88 neutralising antibody"
                                                            ó
     Length 593;
                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human granulin/epithelin precursor (GP88) protein.
                                                            ö
     Score 74; DB 20;
Pred. No. 0.00013;
                                                         0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note- "Encoded by AAG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualiflers
                                                                                                                                                                                                                                                                                            AAE20521 standard; Protein; 593 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Disclosure; Fig 9B; 50pp; English
  100.0%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               97US-0863079.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15-JUN-2001; 2001US-0880842.
                                                                                                                                         566 ARRGIKCLRREAPR 579
                                                                                                           1 ARRGIKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
Ouery Match 100.
Best Local Similarity 100.
Matches 14; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 2002-267529/31.
N-PSDB; AAD32850.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Misc-difference 273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (SERR/) SERRERO G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           593 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            antineoplastic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US2002025543-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               23-MAY-1997;
08-DEC-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                    01-JUL-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            28-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Serrero G;
                                                                                                                                                                                                                                                                                                                                                   AAE20521;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Region
                                                                                                                                                                                                                                                                      AAE20521
                                                                                                                                                                                                                                             RESULT
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    full-length cDNAs defined in the specification. Where a primer set full-length cDNAs defined in the specification. Where a primer set comprises: (a) an oligo-dT primer and an oligonucleotide complementary strand of a polynucleotide which comprises one of the 5602 nucleotide sequences defined in the specification, where the oligonucleotide comprises at least 15 nucleotides; or (b) a combination of an oligonucleotide comprises at sequence complementary to the complementary strand of a polynucleotide which comprises a 5-end sequence and an oligonucleotide comprises a 3-end sequence complementary to a polynucleotide which comprises a 1-and sequence complementary to a polynucleotide which comprises at 1-asst 15 nucleotides and the combination of the 5-end sequence 1s selected from those defined in the specification. The primers sets can be used in antisense therapy and in gene therapy and primer sets can be used in antisense therapy and particularly full-length cDNAs. The primers are also useful for the particularly full-length cDNAs. The primers are also useful for the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            detection and/or diagnosis of the abnormality of the proteins encoded by the full-length cDNAs. The primers allow obtaining of the full-length cDNAs easily without any specialised methods. AAH03166 to AAH13628 and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAB95893 represent human amino acid sequences; and AAH13629 to AAH13632 represent oligonucleotides, all of which are used in the exemplification
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Primer sets for synthesizing polynucleotides, particularly the 5602 full-length cDNAs defined in the specification, and for the detection and/or diagnosis of the abnormality of the proteins encoded by the full-length cDNAs -
Gaps
                                                                                                                                                                                                                                                                                                        Human; primer; detection; diagnosis; antisense therapy; gene therapy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Yamamoto J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The present invention describes primer sets for synthesising 5602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAH13633 to AAH18742 represent human cDNA sequences; AAB92446 to
 ö
                                                                                                                        196. 2
 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Saito K,
Otsuki
 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 8; SEQ ID 15310; 2537pp + CD ROM; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Hayashi K, S
A, Nagai K,
 Mismatches
                                                                                                                                                                                                                                                               Human protein sequence SEQ ID NO:15310.
                                                                                                                                                           AAB94550 standard; Protein; 413 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Nishikawa T,
T, Wakamatsu
 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                        28-JUL-2000; 2000EP-0116126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99JP-0248036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2000JP-0118776.
                                                      566 ARRGIKCLRREAPR 579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99JP-0300253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2000JP-0241899
                                   1 ARRGIKCLRREAPR 14
                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           the present invention.
14; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (HELI-) HELIX RES INST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Isogai T, Nis
Sugiyama T,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2001-318749/34.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              413 AA;
                                                                                                                                                                                                                                                                                                                                                                                 EP1074617-A2.
                                                                                                                                                                                                                                                                                                                                               Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               27-AUG-1999;
11-JAN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            29-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    32-MAY-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 09-JUN-2000;
                                                                                                                                                                                                                                 26-JUN-200F
                                                                                                                                                                                                                                                                                                                                                                                                                     07-FEB-2001.
                                                                                                                                                                                                 AAB94550;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ishii S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ė
                                                                                                                         AAB94550
```

DB 22; Length 413;

91.9%; Score 68;

Query Match

Score 74; DB 23; Length 593; Pred. No. 0.00013;

100.0%;

Query Match Best Local Similarity

NAME OF THE PART O

Gaps

;

ò

```
dermatological; neuroprotective; cardiant; thrombolytic; coagulant; dermatological; neuroprotective; cardiant; thrombolytic; coagulant; dermatological; neuroprotective; cardiant; thrombolytic; coagulant; nontropic; vasotropic; antiporitatic and antianglogenic. The polynucleotides and polypeptides can be used for preventing, treating or ameliorating medical conditions and diagnosing pathological conditions. Polynucleotides, polypeptides, antibodies, agonists and antagonists from the present invention may be used to treat immune disorders by activating or inhibiting the proliferation, differentiation or mobilisation of immune cells, to treat disorders of haematopoletic cells, autoimmune
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAC77607 to AAC78448 encode the human cancer associated proteins given in AAB43398 to AAB44239. The proteins can have activities based on the tissues and cells the genes are expressed in. Example of activities include: cytostatic; proliferative; vulnerary; immunomodulator; antidiabetic; antiasthmatic; antirheumatic; antiarthritic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     dermatological; neuroprotective; thrombolytic; cosquiant; nootropic; vasotropic; antipsoriatic; antiangiogenic; gene therapy; inflammation; immune disorder; haematopoletic cell disorder; autoimmune disorder; allergic reaction; graft versus host disease; organ rejection; haemostatic; thrombolytic; cardiovascular disorder; infection; neurological disease; drug screening.
bioactivity. In contrast, however, ET-2 is apparently not capable of eliciting the growth stimulatory activity characteristic of ET-1 and, in fact, antagonises this ET-1 activity.

See also ARO14338-40, ARO14952-53, AAR14328-9 and AAR15315-20.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human; cancer associated gene; cancer antigen; detection; cancer; diagnosis; cytostatic; proliferative; vulnerary; immunomodulator; antidiabetic; antiasthmatic; antirheumatic; antiarthritic; antiviral; antiinflammatory; antithyroid; antiallergic; antibacterial; cardiant;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Novel isolated nucleic acids comprising sequences encoding peptides useful for treating or diagnosing e.g. cancer -
                                                                                                                                                                                  Score 68; DB 12; Length 593;
Pred. No. 0.0015;
); Mismatches 1; Indels C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human cancer associated protein sequence SEQ ID NO:1416.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 11; Page 2094-2096; 2352pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAB43971 standard; Protein; 621 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (HUMA-) HUMAN GENOME SCI INC.
                                                                                                                                                                                       Query Match 91.9%;
Best Local Similarity 92.9%;
Matches 13; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      08-MAR-2000; 2000WO-US05882.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         990S-0124270.
                                                                                                                                                                                                                                                                                                                                     1 [1111111111
566 AARGTKCLRREAPR 579
                                                                                                                                                                                                                                                                                                      1 ARRGTKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Rosen CA, Ruben SM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2000-587533/55.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first
                                                                                                                                          593 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 N-PSDB; AAC78180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO200055350-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         12-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            08-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 21-SEP-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAB43971;
                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAB43971
           8 x 8 8 8 8 8
                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                      셤
                                 ö
                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ET-1 is a bifunctional growth regulator, capable of stimulating the growth of some cell types while inhibiting the growth of others. ET-2 is functionally similar to ET-1 w.r.t. growth inhibitory
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              epithelins - useful
                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           New cysteine-rich growth modulating proteins, epithelins - us as inhibitors of neoplastic cell growth and to promote wound healing and treat psoriasis
                                 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ET; growth regulation; inhibition; stimulation.
     Pred. No. 0.001;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          . EP
"claim 4, page 53"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /label= EP
/note= "claim 8, page 55"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "claim 1, page 53"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          page 53"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /label= EP-2
/note= "claim 3, page 53"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        page 53"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       page 53"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      page 53"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           note-
282..337
/label- EP-1
                                                                                                                                                                                                                                                                               AAR14326 standard; Protein; 593 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Disclosure; Fig 22; 97pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /label- precursor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /label= EP
/note= "claim 5,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "claim 7,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "claim 6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 910S-0083796.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (BRIM ) BRISTOL-MYERS SQUIB.
     92.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              91WO-US02321
                                                                                                                 386 AARGTKCLRREAPR 399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /label= EP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /label- EP
                                                                                       1 ARRGTKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                           Human epithelin precursor
     Best Local Similarity 92.9
Matches 13; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  124..180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /label-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Shoyab M, Plowman GD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 1991-325168/44.
N-PSDB; AAQ14339.
                                                                                                                                                                                                                                                                                                                                                                                        17-JAN-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3-APR-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       13-MAR-1991;
03-APR-1990;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO9115510-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              17-0CT-1991.
                                                                                                                                                                                                                                                                                                                                     AAR14326;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pept1de
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Peptide
                                                                                                                                                                                                                         RESULT 6
AAR14326
ID AAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                     NAME OF THE PROPERTY OF THE PR
```

Gaps

ö

Indels

ï

Mismatches

76

```
ET-1 is a bifunctional growth regulator, capable of stimulating the growth of some cell types while inhibiting the growth of others. ET-2 is functionally similar to ET-1 w.r.t. growth inhibitory bloactivity. In contrast, however, ET-2 is apparently not capable of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  New cysteine-rich growth modulating proteins, epithelins - useful as inhibitors of neoplastic cell growth and to promote wound healing and treat psoriasis
                                                                                                                                                                                                                          ff; growth regulation; inhibition; stimulation.
                                                                                                                                                                                                                                                                                       /label= precursor
/label= precursor
                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                          AAR14327 standard; Protein; 589 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Disclosure; Fig 23; 97pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                          claim 24,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "claim 25,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "claim 26,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /label= EP
/note= "claim 27,
      5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /label= EP ./note= "claim
                                                                                                                                                                                                                                                                                                                                                /label= EP-1
/note= "claim
                                                                                                                                                                                                                                                                                                                                                                                                  "claim
                                                                                                                                                                                                                                                                                                                                                                                        'label = EP-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      910S-0083796.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              91WO-US02321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (BRIM ) BRISTOL-MYERS SQUIB.
                                                                                                                                                                                                                                                                                                                                                                                                                            label- EP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 label- EP
                                                                                                                                                                            (first entry)
                                                                                                                                                                                                    Mouse epithelin precursor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .570
                                                                                                                                                                                                                                                                                                                                                                                                                                                     .179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .495
        9; Conservative
                                                                                                                                                                                                                                                                                                                                                                          .261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            62..416
                               RGTKCLRREAPR 14
                                               shoyab M, Plowman GD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 1991-325168/44.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              N-PSDB; AAQ14340.
                                                                                                                                                                                                                                                        Mus musculus;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3-APR-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        13-MAR-1991;
03-APR-1990;
                                                                                                                                                                           17-JAN-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WO9115510-A.
                                                                                                                                                  AAR14327;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Peptide
                                                                                                                                                                                                                                                                                               Protein
                                                                                                                                                                                                                                                                                                                                     Protein
                                                                                                                                                                                                                                                                                                                                                                          Protein
                                                                                                                                                                                                                                                                                                                                                                                                               Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Peptide
      Matches
                                                                                             RESULT 9
                                                                                                                                                                                          셤
                                 à
                                                                                                                                                                ö
disorders, allergic reactions, graft versus host disease and organ rejection, modulate haemostatic or thrombolytic activity, modulate inflammation, cancers, cardiovascular disorders, neurological disease and bacterial or viral infections. The peptides, nucleotides, antibodies, agonists and antagonists may be also be used in drug screens. AAC78449 to AAC78457 and AAB44240 represent sequences used in the exemplification of the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This is the amino acid sequence of peptide S14R, comprising amino acid residues S562-R575 of murine GP88 (see AAW85474). GP88 is an 88 kDa glycoprotein autocrine growth factor that is expressed in a tightly requiated manner in normal cells, is overexpressed and unregulated in highly tumorigenic cells derived from normal cells, and which acts as a stringently required growth stimulator for the tumorigenic cells. S14R was used to raise neutralising antibodies to GP88. Antagonists to GP88, such as anti-GP88 antibodies, are used to treat diseases associated with increased expression of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Composition containing antagonist of growth factor GP88 - useful for treating cancer and viral diseases and also for diagnosing disease from altered GP88 expression
                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           antibodies can also be used as diagnostic reagents and to deliver toxins or other compounds to GPB8-expressing cells.
                                                                                                                                                                                                                                                                                                                                                                                      GP88; granulin; epithilin; mouse; growth factor; autocrine; tumou
cancer; viral infection; antagonist; therapy; diagnosis; antigen;
                                                                                                                                                                 ö
                                                                                                                                     Length 621;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 14;
                                                                                                                                                                                                                                                                                                                                                               Mouse GP88 autocrine growth factor antigenic peptide S14R.
                                                                                                                                                                1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                particularly cancer but also viral infections.
                                                                                                                                     DB 21;
0.0015;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 53; DB 20;
Pred. No. 0.016;
                                                                                                                                                                0; Mismatches
                                                                                                                                     Score 68;
Pred. No. (
                                                                                                                                                                                                                                                                                AAW85479 standard; Peptide; 14 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Example 8; Page 45; 86pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            71.6%;
75.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             970S-0991862.
970S-0863079.
                                                                                                                                   / Match 91.9%;
Local Similarity 92.9%;
nes 13; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      98WO-US10555
                                                                                                                                                                                                       1 ARRGIKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 1999-045276/04.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    G.
                                                                                                            621 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   14 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (SERR/) SERRERO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO9852607-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     22-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              16-DEC-1997;
                                                                                                                                                                                                                                                                                                                                    15-MAR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         23-MAY-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           26-NOV-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Serrero G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                          AAW85479;
                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                               antibody
                                                                                                                                                                                                                                                                                                                                                                                                                                          Mus sp.
                                                                                                                                                    Best Loca
Matches
                                                                                                                                                                                                                                                       RESULT 8
```

52

22,

page 55'

-

ð 셤

888888888888

page 55"

page 55

page 55

23,

page 56"

page 56

28, page 56"

Gaps

ö

DB 20; Length 589; 0.6; 1; Indels

2; Mismatches

Score 53; Pred. No.

ರ 3

88888

셤

ð

```
inhibition of the tumorigenic properties of the overproducing cells. Murine GPBB cDNA (see AAVB224) was obtained from the highly tumorigenic PC cell line. Antagonists to GPBB are used to treat diseases associated with increased expression of GPBB, particularly cancer but also viral infections. Fragments of GPBB are used to raise specific antibodies (used as antagonists, as diagnostic reagents and for delivering toxins or other compounds to GPBB expressing cells) and to screen for antibodies. Methods are provided for diagnosing disease, or determining susceptibility to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mouse granulin/epithelin precursor (GP88) protein.
                                                                                                                                                     expressing cells) and to screen for antibodies provided for diagnosing disease, or determinin disease, resulting from altered GP88 activity.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAE20520 standard; Protein; 589 AA.
                                                                                                                                                                                                                                                                              71.6%;
75.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                       Query Match 71.6
Best Local Similarity 75.0
Matches 9; Conservative
                                                                                                                                                                                                                                                                                                                                                               3 RGTKCLRŘEAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2002-267529/31.
N-PSDB; AAD32849.
                                                                                                                                                                                                                                    589 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mouse; granulin
antineoplastic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (SERR/) SERRERO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US2002025543-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-JUL-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 23-MAY-1997;
08-DEC-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28-FEB-2002.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Serrero G;
                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                         564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAE20520;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAE20520
    888888888888
                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                           ö
  eliciting the growth stimulatory activity characteristic of ET-1 and in fact, antagonises this ET-1 activity.
See also AAQ14338-40, AAQ14952-53, AAR14328-9 and AAR15315-20.
                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Composition containing antagonist of growth factor GP88 - useful for treating cancer and viral diseases and also for diagnosing disease from altered GP88 expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This is the amino acid sequence of murine GP88, an 88 kba glycoprotein autocrine growth factor and epithilin/granulin precursor that is expressed in a tightly regulated manner in normal cells, is overexpressed and unregulated in highly tumorigenic cells derived from normal cells, and which acts as a stringently required growth stimulator for the tumorigenic cells. Inhibition of GP88 expression or action in the tumorigenic cells results in an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          autocrine; tumour;
                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "K19T peptide, used to raise antibody"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   to raise antibody"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "P12T peptide used to raise antibody"
                                                                                                                               Length 589;
                                                                                                                                                                         1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GP88; granulin; epithilin; mouse; growth factor; autocr:
cancer; viral infection; antagonist; therapy; diagnosis
                                                                                                                               DB 12;
                                                                                                                                                0.6;
                                                                                                                             Score 53; DB
Pred. No. 0.6;
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           562..575
/note= "S14R peptide, used
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               'note= "encoded by AGC"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     note- "encoded by CTG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        'note= "encoded by TGA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mouse GP88 autocrine growth factor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                             AAW85474 standard; Protein; 589 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Example 5; Fig 8A-D; 86pp; English.
                                                                                                                               71.6%;
75.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              98WO-US10555,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    970S-0991862.
970S-0863079.
                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                                                                                                                                    564 RGTKCLRKKIPR 575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ..362
                                                                                                                                                                         9; Conservative
                                                                                                                                                                                                              3 RGTKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            208..219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    'note-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 1999-045276/04.
N-PSDB; AAV82824.
                                                                                                                           Ouery Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (SERR/) SERRERO G.
                                                                                     589 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO9852607-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    16-DEC-1997;
23-MAY-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            22-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  15-MAR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     26-NOV-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Serrero G;
                                                                                                                                                                                                                                                                                                                                                                                                         AAW85474;
                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mus sp.
                                                                                                                                                                                                                                                                                                                       RESULT 10
                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                           AAW85474
```

```
precursor; GP88; cytostatic; tumourigenicity; tamoxifen; antioestrogen therapy; skin cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 of GP88
                                                                                                                                                                                                                                       344..362
344..362
346..362
346..362
346..362
346..362
346..362
346..362
346..362
346..362
346..362
346..362
346..362
346..362
346..362
346..362
                                                                                                                                                                                                                                                                                                                                                        /note= "Regions used as antigens to raise anti-GP88
antibodies"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The invention relates to a method for diagnosing tumourigenicity in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Diagnosing tumorigenicity in a human, comprising obtaining a cell sample, detecting GP88 in the cells, and determining the number opositive cells in the sample –
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACA
                                                                                                                                                                                                      /label- Unknown
/note- "Encoded by ATG"
                                                                                                                                               Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note- *Encoded by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Disclosure; Fig 8; 50pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                15-JUN-2001; 2001US-0880842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       970S-0863079
990S-0456886
```

9 09:02:08 2003

Wed Jul

900S-0504508

03-APR-1990;

```
ŏ
                                                                                                                                                                                                                                                                g
                                                                                                                                                             ö
                            cells
human. The method comprises obtaining a biological sample containing cells from the patient, detecting GP88 in the cells of the sample, and determining the number of GP88 positive cells in the sample, and determining the number of GP88 positive cells in the sample, and determining the ratio of GP88 positive cells to the total number of cells if a human patient is resistant to the antineoplastic effects of antioestrogen therapy. The method is useful for diagnosing tumouriquenicity in a sample, such as blood, serum, plasma, urine, nipple aspirate, cerebrospinal fluid, liver, kidney, breast, bone, brain, lung, colon, or skin cancer. The method can be used to treat or prevent re-occurrence of cancer in a patient, by administering tamoxifen if the sample contains less than 10 % GP88, or less than 5 % GP88 positive
                                                                                                                                                              Gaps
                                                                                                                                                              ö
                                                                                                                                            Score 53; DB 23; Length 589;
Pred. No. 0.6;
2; Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                           ET; growth regulation; inhibition; stimulation
                                                                                                                                                                                                                                                                                                                                                                      /noc.
280.335
/label- EP-1
`~*e- "claim 12, page 54"
                                                                                                                                                                                                                                                                                                                                                                                                                                                            /label = EP
/note = "claim 15, page 54"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              page 54"
                                                                                                                                                                                                                                                                                                                                                                   54"
                                                                                                                                                                                                                                                                                                                                                                                                                     "claim 13, page 54"
                                                                                                                                                                                                                                                                                                                                                                                                                                             "claim 14, page 54"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "claim 17, page 54"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note= "claim 18, page 55"
                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
1..589
                                                                                                                                                                                                                                        AAR14325 standard; Protein; 589 AA.
                                                                                                                                                                                                                                                                                                                                                           /label= precursor
/note= "claim 11,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              - "claim 16,
                                                                                                                                              71.68;
75.08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  91WO-US02321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  910S-0083796
                                                                                                                                                                                                                                                                                                                                                                                                                                      ΕP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        label- EP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               label - EP
                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                       205..261
/label= E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              570
                                                                                                                                                      Local Similarity 75.0 tes 9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                     .179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               416
                                                                                                                                                                             3 RGTKCLRREAPR 14
                                                                                                                                                                                                                                                                                         Rat epithelin precursor.
                                                                                                                                                                                                                                                                                                                                                                                                                                      label-
                                                                                                                             589 AA;
                                                                                                                                                                                                                                                                                                                           Rattus rattus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 03-APR-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  13-MAR-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                17-0CT-1991.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                409115510-A.
                                                                                                                                                                                                                                                                         17-JAN-1992
                                                                                                                              Sequence
                                                                                                                                                                                                                                                         AAR14325;
                                                                                                                                              Query Match
                                                                                                             protein.
                                                                                                                                                                                                                                                                                                                                                   Protein
                                                                                                                                                                                                                                                                                                                                                                                                    Protein
                                                                                                                                                                                                                                                                                                                                                                                                                             Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pept1de
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Peptide
                                                                                                                                                                                                                                                                                                                                                                            Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Peptide
                                                                                                                                                       Best Loc
Matches
                                                                                                                                                                                                                       RESULT 12
AAR14325
                                                                                                                                                                                                                                                          $$$$$$$$$$$$$$$$$$
                                                                                                                                                                               ŏ
                                                                                                                                                                                              g
```

```
SAPHO syndrome; synovitis; acne; pustulosis; hypertosis; osteomyelitis; uveitis; endophthalmitis; bone; joint; central nervous system; ELISA; inflammatory lesion; acne vulgaris; enzyme linked immunosorbent assay;
                                                                                                                                                                                                                                                                                                                                          ET-1 is a bifunctional growth regulator, capable of stimulating the growth of some cell types while inhibiting the growth of others. ET-2 is functionally similar to ET-1 w.r.t. growth inhibitory bloactivity. In contrast, however, ET-2 is apparently not capable of eliciting the growth stimulation activity characteristic of ET-1 and, in fact, antagonises this ET-1 activity. See also AAQ14338-40, AAQ14952-53, AAR14328-9 and AAR15315-20.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Propionibacterium acnes polypeptides and nucleic acids useful for vaccinating against and diagnosing infections, especially useful for treating acne vulgaris -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                epithelins - useful
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                   New cysteine-rich growth modulating proteins, epithelins - us as inhibitors of neoplastic cell growth and to promote wound
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bhatia A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Propionibacterium acnes immunogenic protein #9305.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ï
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Skeiky YAW, Persing DH, Mitcham JL, Wang SS,
L'maisonneuve J, Zhang Y, Jen S, Carter D;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 51; DB 12;
Pred. No. 1.3;
3; Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            dermatological; osteopathic; neuroprotectant.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAU48409 standard; Protein; 101 AA
                                                                                                                                                                                                                                                                                              Disclosure; Fig 18; 97pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            21-APR-2000; 2000US-199047P.
02-JUN-2000; 2000US-208841P.
07-JUL-2000; 2000US-216747P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     68.9%;
66.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20-APR-2001; 2001WO-US12865
(BRIM ) BRISTOL-MYERS SQUIB.
                                                                                                                                                                                                                                        healing and treat psoriasis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     L'maisonneuve J, Zhang Y,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              :||||||||: ||
564 KGTKCLRKKTPR 575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3 RGTKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Propionibacterium acnes
                                                     Plowman GD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2001-616774/71.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
-hes 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (CORI-) CORIXA CORP.
                                                                                                    WPI; 1991-325168/44.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  589 AA;
                                                                                                                                   N-PSDB; AAQ14338.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         N-PSDB; AAS59542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO200181581-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   27-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-NOV-2001.
                                                     Shoyab M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAU48409;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAU48409
```

```
Ausubel
                                                                                                                                    à
                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                            Sequences AAU39105-AAU68017 represent Propionibacterium acnes immunogenic polypeptides. The proteins and their associated DNA sequences are used in the treatment, prevention and diagnosis of medical conditions caused by a cames. The disorders include SAPHO sydrome (synovitis, acne, pustulosis, hypertosis and osteomyelitis), uveitis and endophthalmitis.

P. acnes is also involved in infections of bone, joints and the central nervous system, however it is particularly involved in the inflammatory lesions associated with acne vulgaris. A method for detecting the presence or absence of P. acnes in a patient comprises contacting a sample with a binding agent that binds to the proteins of the invention and determining the amount of bound protein in the sample. The polypeptides may be used as antigens in the production of antibodies specific for P. acnes proteins. These antibodies can be used to downregulate expression and activity of P. acnes polypeptides and activity of P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                               diagnostic agents for determining P. acres presence, for example, by enzyme linked immunosorbent assay (ELISA).

Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The granulin inhibits keratinocytes and is useful in formulations for promoting the healing of wounds. This peptide was designated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Granulin; keratinocytes; wound healing; inhibition; peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 46; DB 22; Length 101;
Pred. No. 1.8;
1; Mismatches 4; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    New cystine rich granulin peptide(s) from leucocyte(s) – an
keratinocyte inhibitors useful topically for wound healing
Example 1; SEQ ID No 9604; 1069pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAR41885 standard; peptide; 56 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 8; Page 33; 53pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  62.2%;
ilarity 64.3%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     92WO-CA00089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   92US-0829233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |||||: | || ||
ARRGSSCEGRERPR 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 ARRGIKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       granulocytes; leucocytes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PI; 1993-320328/40.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (SOLO/) SOLOMON S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   101 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28-FEB-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo saptens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   03-FEB-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           22-APR-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  W09315195-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Granulin E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  granulin E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Solomon S;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAR41885;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAR4188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sequence. P. acruginosa is an opportunistic human pathogen present in soil water and plants. The specification describes virulence polypeptides and nucleic acid sequence encoding such polypeptides. These sequences can be used to identify a compound which is capable of decreasing the expression of a pathogenic virulence factor. Compounds that inhibit the expression or activity of virulence factor polypeptides can be used to treat pathogenic infections, especially where the infection is a P. aeruginosa infection.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          and
                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The present sequence represents a Pseudomonas aeruginosa polypeptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  note: the sequences given in the specification were poorly legible, in some instances assumptions were made as to the identity of the residue; it is therefore possible that the sequence given below is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mahajan-Miklos S;
                                                                                                                                                                                                                                                                                                                                                                                                                    Amino acid sequence of a virulence factor encoded by ORF26757c.
                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 41; DB 20; Length 113;
Pred. No. 15;
2; Mismatches 3; Indels
  DB 14; Length 56;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Virulence factors useful in developing disease treatments
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human pathogen; virulence polypeptide; virulence factor; pathogenic infection; Pseudomonas aeruginosa infection.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Goodman HM,
                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Search completed: July 8, 2003, 16:24:17
Job time : 36 secs
                                                                                                                                                                                                                                                                    AAY29199 standard; Protein; 113 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Disclosure; Fig 3; 228pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      면, 맛
                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Cao H, Drenkard
Tan M, Tsongalis
                         ilarity 100.0%;
Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            55.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      97US-0066517
                                                                                                                                                                                                                                                                                                                                                                 25-OCT-1999 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GEHO ) GEN HOSPITAL CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ||| :|:|| | |
RRGPRCIRRCARR 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2 RRGTKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 not entirely correct.
                                                                                                                           ARRGIKCL 56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
'...hos 8; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 1999-357851/30.
                                                                                                  1 ARRGIKCL 8
Query Match
Best Local Similarity
Matches 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 113 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      35-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      25-NOV-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        W09927129-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        03-JUN-1999.
                                                                                                                                                                                                                                                                                                                    AAY29199;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
```

```
GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
```

OM protein - protein search, using sw model

July 8, 2003, 16:21:00; Search time 8.61539 Seconds (without alignments) 47.812 Million cell updates/sec Run on:

US-09-824-647-7 74 Title: Perfect score: Sequence:

1 ARRGIKCLRREAPR 14

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

262574 seqs, 29422922 residues Searched:

262574 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 20000000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Issued\_Patents\_AA:\* Database :

/cgn2\_6/ptodata/1/iaa/6B\_COMB.pep:\*/cgn2\_6/ptodata/1/iaa/PCTUS\_COMB.pep:/cgn2\_6/ptodata/1/iaa/backfiles1.pep: /cgn2\_6/ptodata/1/laa/5A\_COMB.pep:\* /cgn2\_6/ptodata/1/laa/5B\_COMB.pep:\* /cgn2\_6/ptodata/1/laa/6A\_COMB.pep:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed and is derived by analysis of the total score distribution.

### SUMMARIES

	,		_			<b></b>	<b></b>				. <b>-</b> 1		·=		<b>-</b>			۵			٠,		٠,	_	_		_	
		Appl	Appl	Appl	Appl	Appl	Appl	Appl	Appl	Appl	Appl	Appl	Appl	Appl	Appl	Appl	Appl	, Ap	Appl	Appl	Appl	Appl	Appl	App	App	Appl	App	Appl
	g :	1,	17,	4	4,	4,	4,	2	9	ý	ý	'n	ý	7	7	, 7	'n	307	'n	'n	٦,	ä	'n	27	28,	24,	Ξ,	,
	tio	ce	ce	ce	če	oce	ce	ce	ce	ce	ce	ce	Sce	ce	ce	ce	ce	ce	ce	ce	ce	ce	ce	ce	ce	ce	ce	ce
	Description	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence
	Des	Se	Š	Š	Š	Š	Šě	Š	Šě	Š	Š	Šě	Š	Š	Se	Š	S	Š	Š	Š	Se	Se	Se	Se	Se	Se	Se	Se
	į																	-							•			
			_					•									~	307		~				~			ロ	
		2-7	2-17	9-4	8-4	3-4	21-4	2-5	9-8	9-8	9-6	2-2	21-6	8-2	8-2	3-2	21-2	7A-3	1-2	22	3-1	6-1	6-3	4-5	1-28	7-20	4A-	1-1
	į	-86	-86	-648	-99	-33	0233	-86	-641	-991	-33.	-86	023	-641	-99	-33	0233	-63,	-42	-07	-08	-21	-51	74-864-5	-461-2	-367-2	-05	-77
		991	991	668	429	431	-US91-02321	991	999	429	431	991	91-	999	429	431	91-	199	230	712	966	429	429	724	171	697	429	718
		US-08-991-862-	US-08-991-862-1	JS-07-668-648-4	JS-08-429-998-4	JS-08-431-333-	SD-1	JS-08-991-862-	JS-07-668-648-6	JS-08-429-998-	JS-08-431-333-6	US-08-991-862-	PCT-US91-02321	JS-07-668-648-	US-08-429-998-2	JS-08-431-333-	PCT-US91-02321	JS-09-199-637A-307	US-09-230-421-	JS-08-712-072C-	JS-08-996-083-	US-09-429-516-	US-09-429-516-	<b>US-09-7</b>	JS-09-171	JS-09-697	JS-08-429-054A-	JS-08-718-777
	£ i	ΩS	OS	à	is OS	os.	PCT	ΩS	OS.	ūS	SD	Ġ	2	Ċ	ΩŠ	as	ភ្ជ	ΩŠ	ΩŜ	ūS	ūS	as	as	ΩS	dS	ΩŜ	ΩS	ΩS
	DB	4	4	Н	7	~	Ŋ	4	<del>, -</del> 1	7	7	7	'n	Н	7	~	Ŋ	4	4	~	m	4	4	7	7	4	7	7
	Match Length DB	14	593	593	593	593	593	14	589	589	589	589	589	589	589	589	589	113	301	422	156	1156	156	278	121	368	890	890
	Leng		•,	٠.		•	•							-	•		-	• •		•	H		-		H		Ä	Ŧ
ΓV	id.	0	0.	6	6	6	6	9	و	9	9	9	9	6.89	6.	6.89	6.89	55.4	4.	=	-:	54.1	Ξ	7.	52.7	4.	4.	4.1
Ouerv	Mat	100.0	100	91.	91		2	7	7	7	7	7	7	ĕ	68	8	8	ķ	ຜ	5	Š	Š	Ñ	'n	'n	S	S	2
	re	74	74	68	89	89	89	53	23	53	53	53	23	21	21	21	21	41	41	40	40	40	9	33	39	38	38	38
	Score																											
4	, .	-	~	~	4	'n	9	7	8	6	0	_	~	۳	₹	S	•	7	8	6	0	_	~	ლ	4	Ś	و	7
Result	2				-						-	٦	-	-	-	-	٦	-	-	-	7	~	~	~	~	~	~	
Z,	'																											

Sequence 17, Application US/08991862

| Sequence 17, Application US/08991862
| Patent No. 6309826
| GENERAL INFORMATION:
| APPLICANT'S extract, Ginette
| TITLE OF INVERTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
| TITLE OF INVERTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
| CURRENT APPLICATION NUMBER: US/08/991,862
| CURRENT PILING DATE: 1998-08-1
| EARLIER APPLICATION NUMBER: 08/863,862
| RAKLIER RPILING DATE: 1997-05-23
| NUMBER OF FILING DATE: 1997-05-33
| SOFTWARE: PATENTIN Ver. 2.0
| SOFTWARE: PATENTIN VER. 2.0

ö

Gaps

Query Match 100.0%; Score 74; DB 4; Length 14; Best Local Similarity 100.0%; Pred. No. 1e-06; Matches 14; Conservative 0; Mismatches 0; Indels

δ g

Appli Appli	•	•
738477777777777777777777777777777777777	E.	ody.
	·	to develop nnal antibody
sednence sed	PAGC	deve an1
8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	ANJ	to c
	AND ANTAGONISTS	n GP88 used to GP88 monoclonal
		ouo
	FACTOR	peptide of human GP88 used ing anti-human GP88 monoclo
2.847-7-7-7-60000044-4		n GP8
US-09-051-341-7 US-08-853-948B-5 US-08-611-729A-8 US-08-113-208C-7 US-08-314-819A-7 US-08-318-819A-7 US-08-370-838-32 US-08-955-014-7 US-08-955-014-7 US-09-955-014-7	OWT	uma an
1-341 1-341 1-729 1-	MEN GR	if h hum
-051 -611 -611 -611 -112 -112 -248 -337 -927 -925 -955 -955 -955 -955 -955	ALIGNMENTS 2 GENIC GROW 7991,862 3,862	ide of huma anti-human
US-09-051-341 US-08-853-9481 US-08-611-72-208 US-08-112-208 US-08-112-208 US-08-317-645 US-08-37-634 US-08-37-634 US-08-37-326 US-08-37-326 US-08-37-326 US-08-37-326 US-08-37-326 US-08-37-326 US-08-37-326 US-08-37-326 US-08-37-326 US-08-37-326 US-08-37-326 US-08-37-326 US-08-37-326 US-08-37-326 US-08-37-326 US-08-37-326 US-08-38-41-38 US-08-38-41-38 US-08-38-41-38 US-08-38-41-38 US-08-38-41-38 US-08-38-41-38	AL. 62 (63 (63 ,63 ,63 ,63 ,63 ,63 ,63 ,63 ,63 ,63 ,	otid , an
8 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1918 11-A 11-A 117 117 117 117 117	per
ろすろすここことはようろみすころす	ALIGNMENTS 7, Application US/08991862 7, Application US/08991862 NFORMATION: TI: Serrero, Ginette NIVERTION: 88 KDA TUMORIGENIC GROWTH FERENCE: Z9996.488/P001.A APPLICATION NUMBER: US/08/991.862 FILING DATE: 1994-08-17 APPLICATION NUMBER: 08/863,862 FILING DATE: 1997-05-23 PESCO ID NOS: 17 17 17	nulin Internal pept neutralizing
1068 11257 12537 25339 411 441 441 441 441 441	on US/0 Ginette 88 KDA 6.488/P NUMBER: 1998-0 NUMBER: 1997-0 1997-0	lin teri utra
01 12	Application 18309826 ORMATION: Serrero, Gin WYENTTON: 88 ENCE: 2996.4 PLICATION NUM LING DATE: 19 PLICATION NUM LING DATE: 19 FLICATION NUM LING DATE: 19 PLICATION NUM LI	т <u> </u>
<b>~</b> ©©©	IN CONTRACTOR	auman gra PEPTIDE (1)(14) RMATION: RMATION:
244444444444444444444444444444444444444	Police CAT	Buman g PEPTIDE (1)(1) RMATION 7
្ត មេសាសស្រាស្រស្សស្រាស្សស្នា	APP APP SECULIA AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	PRT SM: Buman gr. E: EY: PEPTIDE ON: (1)(14 INFORMATION: INFORMATION:
	862 7,7 1 INF FER T FER AP FI E	PRT SM: E: EY: ON: INF
•	RESULT 1  US-08-991-862-7  Sequence 7, Application US/08991862  Batent No. 6309826  GENERAL INFORMATION:  APPLICAT: Serreto, Ginette  TITLE OF INVENTION: 88 KDA TUMORICENIC GR  FILE REFERENCE: 29996.488/F001-A  CURRENT FILING DATE: 1998-08-17  EARLIER APPLICATION NUMBER: 08/863,862  EARLIER FILING DATE: 1997-05-23  NUMBER OF SEQ ID NOS: 17  SOFTWARE: PATENTIN OF: 2.0  SOFTWARE: PATENTIN OF: 2.0	TYPE: PRT  CRGANISM: Human gr. FEATURE: NAME/KEY: PEPTIDE  LOCATION: (1)(14  OTHER INFORMATION: G-08-991-862-7
228 333 332 332 444 445 5444 5443 5443 5443	LT 8-9 8-9 1TL 1TL 1TL 1TLE URR ARL OFT	TYPE: ORGAN NAME/I LOCAT OTHER 0-991
,	RESULT US-08-08-08-08-08-08-08-08-08-08-08-08-08-	0-sı
	&D	

```
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                        ö
                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
APPLICANT: Shoyab, Mohammed
APPLICANT: Plowman, Gregory D.
TITLE OF INVENTION: EPITHELINS: NOVEL CYSTEINE-RICH GROWTH
TITLE OF INVENTION: MODULATING PROTEINS
NUMBER OF SEQUENCES: 12
                                                                         Query Match 100.0%; Score 74; DB 4; Length 593; Best Local Similarity 100.0%; Pred. No. 4.3e-05; Matches 14; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NOVEL CYSTEINE-RICH GROWTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 593;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOFTWARE: Patentin Release #1.0, Version #1.25
URRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/668,648
FILING DATE: 19910819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     91.9%; Score 68; DB 92.9%; Pred. No. 0.00 Live 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CLASSIFTCATION: 514
ATTORNEY/AGENT INFORMATION:
NAME: Misrock, S. Leslie
REGISTRATION NUMBER: 18,872
REFERENCE/DOCKET NUMBER: 5624-161-999
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212)790-9090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MODULATING PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         E: Pennie & Edmonds
1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 4, Application US/08429998
; Patent No. 5885961
GENERAL INFORMATION:
APPLICANT: Shoyab, Mohammed
APPLICANT: Plowman, Gregory D.
TITLE OF INVENTION: EPITHELINS: NC
; TITLE OF INVENTION: MODULATING PRO
NUMBER OF SEQUENCES: 12
                                                                                                                                                                                                                                                                                                    Sequence 4, Application US/07668648
Patent No. 5416192
                                                                                                                                                                                  1111111111111
566 ARRGTKCLRREAPR 579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEFAX: (212) 869-9741
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 : 593 amino acids
AMINO ACID
                                                                                                                                                             1 ARRGTKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 ARRGIKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 91.9
Best Local Similarity 92.9
Matches 13; Conservative
                  ; ORGANISM: Human GP88 cDNA
US-08-991-862-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MOLECULE TYPE: protein US-07-668-648-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CORRESPONDENCE ADDRESS:
ADDRESSEE: Pennie &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New York
New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ZIP: 10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-08-429-998-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STATE:
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a
                                                                                                                                                             ò
                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
```

```
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JUSTACE OF SHEAT ON:

APPLICANT: Shoyab, Mohammed
APPLICANT: PLOWMEN, Gregory D.

TITLE OF INVENTION: EPITHELINS: NOVEL CYSTEINE-RICH GROWTH

"TOTE OF INVENTION: ANDULATING PROFEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 593;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 68; DB 2; Length 593
Pred. No. 0.00046;
0; Mismatches 1; Indels
                                                                                                                                                                                         SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/429,998
FILING DATE: 27-APR-1995
CLASSIFICATION: 514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                            REGISTRATION WUMBER: 18,872
REFERENCE/DOCKET\NUMBER: 5624-161-999
TELECOMMUNICATION INFORMATION:
STREET: 1155 Avenue & Edmonds
CIIV: New York
STATE: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE: Pennie & Edmonds
STREET: 1155 Avenue of the Americas
CITY: New York
STATE: New York
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                27-APR-1995
27-APR-1995
27-540-1995
                                                                                                                                                                                                                                                            CLASSIFICATION: 514
PRIOR APPLICATION NUMBER: US 07/668,648
FILING DATE: 13-MAR-1991
ATTORNEY/AGENT, INFORMATION:
                                                                                                                                                     COMPUTER: IBM PC compatible OPERATING (SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 4, Application US/08431333 Patent No. 5965723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: amino acid
TOPOLOGY: 1.4-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity 92.9%;
Matches 13; Conservative
                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                             Misrock, S. Leslie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE: 13-MAR-1991
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEFAX: (212) 869-9741
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 ARRGIKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; MOLECULE TYPE: protein US-08-429-998-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CLASSIFICATION:
                                                                                    COUNTRY: USA
ZIP: 10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10036
```

```
10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STATE: Ne COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                        ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 4, Applications
Sequence 4, Applications
GENERAL INFORMATION:
APPLICANT: Shoyab, Mohammed
APPLICANT: Plowman, Gregory D.
TILE OF INFURION: EPITHELINS: NOVEL CYSTEINE-RICH GROWTH
TILE OF INFURION: MODULATING PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 5; Length 593;
                                                                                                                                                                                                                                     Length 593;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
GURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US91/02321
FILING DATE: 19910403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 68; DB 5; 1 Pred. No. 0.00046;
                                                                                                                                                                                                                                      Score 68; DB Pred. No. 0.000; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        E: Bristol-Myers Squibb Company 3005 First Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME: Poor, Brian W.
REGISTRATION NUMBER: 32,928
REFERENCE/DOOKET NUMBER: ON0071A-PC
TELECOMMUNICATION INFORMATION:
NAME: MISTOCK, S. LESILE
REGISTRATION NUMBER: 18,872
REFERENCE/POCKET NUMBER: 5624
TELECOMMUNICATION INFORMATION:
TELEPRAN: (212) 869-9741
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       91.9%;
92.9%;
                                                                                                                                                                                                                                     Query Match 91.9%;
Best Local Similarity 92.9%;
Matches 13; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                       (206)728-4800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LENGTH: 593 amino acids TYPE: AMINO ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 ARRGTKCLRREAPR 14
                                                                                                                                     : 593 amino acids
amino acid
                                                                                                                                                                                                                                                                                                     1 ARRGTKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity 92.5.
-hea 13; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       INFORMATION FOR SEQ ID NO:
                                                                                                                                                                ; TOPOLOGY: linear;
; MOLECULE TYPE: protein
US-08-431-333-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; MOLECULE TYPE: protein
PCT-US91-02321-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Seattle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                        RESULT: 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                                                                       ŏ
                                                                                                                                                                                                                                                                                                                                      윱
```

```
Gaps
                                             GENERAL INFORMATION:
APPLICANT: SETTETO, GINETTE
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE REFERENCE: 29996.488/P0011-A
CURRENT APPLICATION NUMBER: US/08/991,862
CAURRENT FILLING DATE: 1998-08-17
EARLIER APPLICATION NUMBER: 08/863,862
EARLIER PILLING DATE: 1997-05-23
NUMBER OF SEQ ID NOS: 17
SOFTWARE: PATENTIN VET. 2.0
SEQ ID NO 5:
LENGTH: 14
                                                                                                                                                                                                                                                                                                                                                                     FEATURE:
NAME/KEY: PEPTIDE
LOCATION: (1): (14)
OTHER INFORMATION: Internal peptide of mouse GP88 used to raise the OTHER INFORMATION: antisera against the GP88 used in the CATHER INFORMATION: immunoaffinity step.
US-08-991-662-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gregory D. EPITHELINS: NOVEL CYSTEINE-RICH GROWTH MODULATING PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/668,648
FILING DATE: 19910819
CLASSIFICATION: 514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 53; DB 4;
Pred. No. 0.0043;
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SSEE: Pennie & Edmonds
1: 1155 Avenue of the Americas
New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 6, Application US/07668648
Patent No. 5416192
GENERAL INFORMATION:
APPLICANT: Shoyab, Mohammed
APPLICANT: Plowman, Gregory D.
Sequence 5, Application US/08991862
Patent No. 6309826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATTORNEY/AGENT INFORMATION:
NAME: Misrock, S. Leslie
REGISTRATION NUMBER: 18,872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE/DOCKET NUMBER: 5
TELECOMMUNICATION INFORMATION
TELEPHONE: (212)790-9090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              71.6%;
75.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEFAX: (212) 869-9741 INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LENGTH: 589 amino acids TYPE: AMINO ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3 RGTKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3 RGTKCLRKKIPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE OF INVENTION: EPITILE OF INVENTION: MOI NUMBER OF SEQUENCES: 1.3 CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                             TYPE: PRT
ORGANISM: mouse granulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
Matches 9; Conservi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               USA
```

MOLECULE TYPE: protein

RESULT

```
CORRESPONDENCE ADDRESS:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 11
US-08-991-862-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                               ö
                                                                                                                                                                                                                                            EPITHELINS: NOVEL CYSTEINE-RICH GROWTH MODULATING PROTEINS
                               DB 1; Length 589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 589,
                                                              1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OPERATING SYSTEM: PC_DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
SURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REGISTRATION NUMBER: 18,872
REFERENCE/DOCKET NUMBER: 5624-161-999
FELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                       STREET: 1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/668,648
FILING DATE: 13-MAR-1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: US/08/429,998
FILING DATE: 27-APR-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 10
US-08-431-333-6
; Sequence 6, Application US/08431333
; Patent No. 5965723
                                                                                                                                                                                        US-08-429-998-6; Sequence 6, Application US/08429998; Patent No. 5885961
                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-
                                                                                                                                                                                                                                                                                                                                                         ADDRESSEE: Pennie & Edmonds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           71.6%;
75.0%;
                            Query Match 71.6%;
Best Local Similarity 75.0%;
Matches 9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILING DATE:
ATTORNEY/AGENT INFORMATION:
WASTOCK, S. Leslie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               589 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELEFAX: (212) 869-9741 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1111111: 11
564 RGTKCLRKKIPR 575
                                                                                                              1111111:: 11
564 RGTKCLRKKIPR 575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 71.6
Best Local Similarity 75.0
Matches 9; Conservative
                                                                                              3 RGTKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3 RGTKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                      TITLE OF INVENTION: EP
TITLE OF INVENTION: MO
NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE OF INVENTION:
TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                        New York
: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
                                                                                                                                                                                                                                         GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                       10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-08-429-998-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
us-07-668-648-6
                                                                                                                                                                                                                                                                                                                                                                                                     STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                       g
                                                                                               ð
```

```
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
APPLICANT: Serrero, Ginette
TITLE OF INVENTIONS: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE REFERENCE: 29996-448FP001-A
CURRENT APPLICATION NUMBER: US/08/991,862
CURRENT FILING DATE: 1998-08-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 53; DB 4; Length 589;
Pred. No. 0.18;
2; Mismatches 1; Indels
                                                                                                                                                                                           SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/431,333
FILING DATE: 27-APR-1995
CLASSIFICATION: 536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                      5624-161-999
ADDRESSEE: Pennie & Edmonds
STRET: 1155 Avenue of the Americas
CITY: New York
STATE: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pred. No
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EARLIER APPLICATION NUMBER: 08/863,862
EARLIER FILING DATE: 1997-05-23
NUMBER OF SEQ ID NOS: 17
SEQ ID NO 2
LENGTH: 589
                                                                                                                                                                                                                                                                                          PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/668,648
FILING DATE: 13-MAR-1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: PRT; ORGANISM: Mouse epithelin/granulin
US-08-991-862-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 2, Application US/08991862 Patent No. 6309826
                                                                                                                                      MEDIUM TYPE: Floppy disk COMPUTER: IBM PC COMPATIBLE OPERATING CYCHEM.
                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE/DOCKET NUMBER: 5(
FELECOMMUNICATION INFORMATION
TELEPHONE: (212)790-9090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           71.6%;
75.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            71.6%;
75.0%;
                                                                                                                                                                                                                                                                                                                                                      ATTORNEY AGENT INFORMATION:
NAME: Misrock, S. Leslie
REGISTRATION NUMBER: 18,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEFAX: (212) 869-9741 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1111111:: 11
564 RGTKCLRKKIPR 575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 71.6
Best Local Similarity 75.0
Matches 9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3 RGTKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3 RGTKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TOPOLOGY: linear; MOLECULE TYPE: protein US-08-431-333-6
                                                                                                                     COMPUTER READABLE FORM:
                                                                                                                                                                             OPERATING, SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
Matches 9; Conserv
                                                                                                                                                                                                                                                           FILING DATE: 27 CLASSIFICATION:
                                                                              USA
                                                                                            10036
```

```
Gaps
                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Shoyab, Mohammed
APPLICANT: PLOWMAN, Gregory D.
ATTLE OF INVENTION: EPITHELINS: NOVEL CYSTEINE-RICH GROWTH
TITLE OF INVENTION: MODULATING PROTEINS
                                                                                                                                                                                                                                                                                                                        Length 589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 2; Length 589;
                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READBLE FORM:
COMPUTER: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION NDATA:
APPLICATION NUMBER: US/08/429,998
FILING DATE: 27-APR-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred. No. 0.39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME: Misrock, S. Leslie
REGISTRATION UNBER: 18,872
REFERENCE, DOCKET NUMBER: 5624-161-999
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3: Pennie & Edmonds
1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/668,648
FILING DATE: 13-MAR-1991
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 2, Application US/08429998
Patent No. 5885961
GENERAL INFORMATION:
                                                  NAME: MISTOCK, S. Leslie
REGISTRATION NUMBER: 18,872
REFERENCE/DOCKET NUMBER: 56
                                                                                                            TELECOMMUNICATION INFORMATION
TELEPRONE: (212)790-9090
TELERAX: (212) 869-9741
INFORMATION FOR SEQ ID NO: 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              68.9%;
66.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEPHONE: (212)790-9090
TELEFAX: (212)869-9741
INFORMATION FOR SEQ ID NO: 2
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LENGTH: 589 amino acids
                                      ATTORNEY/AGENT INFORMATION
                                                                                                                                                                                        SEQUENCE CHARACTERISTICS:
LENGTH: 589 amino acids
TYPE: AMINO ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity 66.7
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                              564 KGTKCLRKKTPR 575
                                                                                                                                                                                                                                                                                                                              Query Match 68.9
Best Local Similarity 66.7
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                          3 RGTKCLRREAPR 14
19910819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TOPOLOGY: linear MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                      ; MOLECULE TYPE: protein US-07-668-648-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CORRESPONDENCE ADDRESS:
ADDRESSEE: Pennie &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  amino acid
                                                                                                                                                                                                                                                      linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          New York
New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FILING DATE: 27 CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10036
                                                                                                                                                                                                                                                    TOPOLOGY ?
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-08-429-998-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-08-429-998-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APERCET NO. 54101.2.
GENERAL INFORMATION:
APPLICANT: Shoyab, Mohammed
APPLICANT: Plowman, Gregory D.
TITLE OF INVERTION: EPITHELINS: NOVEL CYSTEINE-RICH GROWTH
TITLE OF INVERTION: MODDLATING PROTEINS
                                                                                                  Gregory D. EPITHELINS: NOVEL CYSTEINE-RICH GROWTH MODULATING PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 589;
                                                                                                                                                                                                                                                                  COMPUTE: Floppy disk
COMPUTE: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFWRARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US91/02321
FILING DATE: 19910403
CLASSIFICATION: 514
ATTORNEY/ACENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                          E: Bristol-Myers Squibb Company 3005 First Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 53;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STREET: 1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/668,648
                                      Sequence 6, Application PC/TUS9102321 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 2, Application US/07668648 Patent No. 5416192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTORNEY/AGENT INFORMATION:
NAME: POOL, Brian W.
REGISTRATION NUMBER: 32,928
                                                                          APPLICANT: Shoyab, Mohammed
APPLICANT: Plowman, Gregory D
ITILE OF INVENTION: EPITHELIN
ITILE OF INVENTION: MODULATION
NUMBER OF SEQUENCES: 12
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE/DOCKET NUMBER: ON TELECOMMUNICATION: TELEPHONE: (206)728-4800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                71.6%;
75.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE CHARACTERISTICS:
LENGTH: 589 amino acids
TYPE: AMINO ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity 75.0°
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3 RGTKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          INFORMATION FOR SEQ ID NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                            STREET: 3005 First
CITY: Seattle
STATE: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY: US
                                                                                                                                                                                              ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PCT-US91-02321-6
```

RESULT 13

g

```
Oy 3 RCTKCLREARR 14

Db 564 KGTKCLREARR 1575

RESULT 15

GGENERAL INFORMATION

FRETCH NO. 5965733

GENERAL INFORMATION

FORESTORY PLOWMEN GREGORY D.

TITLE OF INVENTION: WODILATING PROTEINS

FORESTORES ADDRESS: 12

CORRESPONDERE ADDRESS: 12

CORRESPONDERE ADDRESS: 12

CORRESPONDERE ADDRESS: 13

CORRESPONDERE ADDRESS: 14

CORRESPONDERE ADDRESS: 14

CORPUTE: New York

COMPUTE: New York

COMPU
```

Query Match 68.9%; Score 51; DB 2; Length 589; Best Local Similarity 66.7%; Pred. No. 0.39; Matches 8; Conservative 3; Mismatches 1; Indels 0; Gaps

ò

:||||||::|| | 564 KGTKCLRKKTPR 575 Search completed: July 8, 2003, 16:30:21 Job time: 9.61539 secs

```
GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
```

```
OM protein - protein search, using sw model

Run on: July 8, 2003, 16:24:26; Search time 13.641 Seconds

(without alignments)
119.483 Million cell updates/sec
Title: US-09-824-647-7
Perfect score: 74
Sequence: 1 ARRGTKCLRREAPR 14
Scoring table: BLOSUM62
Gapop 10.0, Gapext 0.5
Searched: 445758 seqs, 116419773 residues
Total number of hits satisfying chosen parameters: 445758
Minimum DB seq length: 0
Maximum DB seq length: 2000000000
```

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Published\_Applications\_AA:\*

1: /cgn2\_6/ptodata/2/pubpaa/US07\_NEW\_PUB.pep:\*

2: /cgn2\_6/ptodata/2/pubpaa/PCT\_NEW\_PUB.pep:\*

3: /cgn2\_6/ptodata/2/pubpaa/PCT\_NEW\_PUB.pep:\*

4: /cgn2\_6/ptodata/2/pubpaa/US06\_NEW\_PUB.pep:\*

5: /cgn2\_6/ptodata/2/pubpaa/US06\_PUBCOMB.pep:\*

6: /cgn2\_6/ptodata/2/pubpaa/US06\_PUBCOMB.pep:\*

7: /cgn2\_6/ptodata/2/pubpaa/US08\_PUBCOMB.pep:\*

8: /cgn2\_6/ptodata/2/pubpaa/US09\_NEW\_PUB.pep:\*

9: /cgn2\_6/ptodata/2/pubpaa/US09\_PUBCOMB.pep:\*

10: /cgn2\_6/ptodata/2/pubpaa/US09\_PUBCOMB.pep:\*

11: /cgn2\_6/ptodata/2/pubpaa/US09\_PUBCOMB.pep:\*

12: /cgn2\_6/ptodata/2/pubpaa/US09\_PUBCOMB.pep:\*

13: /cgn2\_6/ptodata/2/pubpaa/US09\_NEW\_PUB.pep:\*

14: /cgn2\_6/ptodata/2/pubpaa/US09\_NEW\_PUB.pep:\*

14: /cgn2\_6/ptodata/2/pubpaa/US09\_NEW\_PUB.pep:\*

14: /cgn2\_6/ptodata/2/pubpaa/US00\_NEW\_PUB.pep:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

# SUMMARIES

	Description	Sequence 7, Appli	Sequence 17, Appl	Sequence 1416, Ap	Sequence 5, Appli	Sequence 5, Appli	Sequence 5, Appli	Sequence 5, Appl1	Sequence 5, Appl1	Sequence 2, Appli	Sequence 2, Appli	Sequence 2, Appli								
	- !									-										
	aT .	US-09-824-647-7	US-10-218-509-7	US-10-281-160-7	O US-09-813-156-7	0 US-09-824-807-7	US-09-824-647-17	US-10-218-509-17	US-10-281-160-17	US-09-813-156-17	US-09-824-807-17	) US-09-925-301-1416	US-09-824-647-5	US-10-218-509-5	US-10-281-160-5	0 US-09-813-156-5	0 US-09-824-807-5	US-09-824-647-2	US-10-218-509-2	US-10-281-160-2
8	9 :	6	σ	6	ä	ĭ	σ	σ	σ	ĭ	ä	ĭ	6	6	6	ĭ	Ħ	9	σ	6
1	Match Length DB	14	14	14	14	14	593	593	593	593	593	621	14	14	14	14	14	589	589	589
Query	March	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	91.9	71.6	71.6	71.6	71.6	71.6	71.6	71.6	71.6
i	score	7.4	74	74	74	74	74	74	74	74	74	68	53	53	53	53	53	53	53	. 53
Result	9	1	7	٣	4	S	9	7	80	6	10	11	12	13	14	15	16	17	.18	19

Sequence 2, Appli Sequence 307, Appl Sequence 307, Appl Sequence 11, Appl Sequence 11, Appl Sequence 692, Appl Sequence 692, Appl Sequence 28, Appl Sequence 28, Appl Sequence 397, Appl Sequence 37, Appl Sequence 13739, Appl Sequence 113739, Appl Sequence 142, Appl Sequence 142, Appl Sequence 16, Appl Sequence 16, Appl Sequence 24, Appl Sequence 160, Appl Sequence 161, Appl Sequence 161, Appl Sequence 161, Appl Sequence 161, Appl Sequence 161, Appl
10 US-09-813-156-2 10 US-09-84-807-2 9 US-10-217-700-11 9 US-10-217-700-11 9 US-10-156-761-14524 10 US-09-866-050A-692 9 US-10-269-353-15 10 US-09-970-716-1 10 US-09-970-716-1 10 US-09-970-716-1 10 US-09-970-716-1 10 US-09-970-716-1 10 US-09-970-716-1 10 US-09-970-716-1 10 US-09-970-716-1 10 US-09-970-1 10 US-09-970-1 10 US-09-970-1 10 US-09-970-1 10 US-09-970-1 10 US-09-98-974 10 US-09-98-974 10 US-09-98-974 10 US-09-98-974 10 US-09-98-974 10 US-09-98-956-1 10 US-09-98-951-4995 10 US-09-764-891-4995 10 US-09-764-891-4993 10 US-09-764-891-4993 10 US-09-764-891-4993
589 589 1113 1083 1250 1250 275 275 275 275 1121 1131 1084 1084 1081 1081 1181 1181 1181 118
711.6 711.6 711.6 711.6 711.7 711.6 711.7 711.6 711.7 711.6 711.7 7
55 50 50 50 50 50 50 50 50 50
22222222222222222222222222222222222222

# ALIGNMENTS

```
GS-09-824-647-7

Sequence 7, Application US/09824647

Sequence 7, Application US/09824647

Sublication No. US20020183270A1

GENERAL INFORMATION:

APPLICAMT: Serrero, Ginette

TILE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS

FILE REFERENCE: 29996.488/P001-A

CURRENT FILING DATE: 2001-04-04

PRIOR APPLICATION NUMBER: BARLIER APPLICATION NUMBER: 08/991,862

PRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER: 08/991,862

PRIOR APPLICATION NUMBER: EARLIER FILING DATE: 1996-08-17

PRIOR APPLICATION NUMBER: EARLIER FILING DATE: 1997-05-23

NUMBER OF SEQ ID NOS: 17

SEQ ID NO 7

LENGTH: 14

TYPE: PRR

NAME/RET: PEPTIDE

LOCATION: (1)...(14)

OTHER INFORMATION: Internal peptide of human GP88 used to develop

OTHER INFORMATION: Internal peptide of human GP88 monoclonal antibody.

GUSTY MATCH

OVERN INFORMATION: Internal peptide of human GP88 monoclonal antibody.

GOSTATOR: APPLICATION: ON ONE OF MISMATCHES OF Indels OF Gaps

MATCH SIMPORMATION: ON ONE OF MISMATCHES OF INDELS OF GAPS

ALCALING SIMILARITY ON ONE OF MISMATCHES OF INDELS OF GAPS
```

ö

RESULT 2
Sequence 7, Application US/10218509; Publication No. US20030092661A1
September 1 Series Ser

```
LOCATION: (1)..(14)
OTHER INFORMATION: Internal peptide of human GP88 used to develop
OTHER INFORMATION: neutralizing anti-human GP88 monoclonal antibody
                                                                                                                                                                                                                                                                                                                                                                                                                                                   100.0%; Score 74; DB 10;
100.0%; Pred. No. 1.6e-06;
tive 0; Mismatches 0;
                                  PRIOR APPLICATION NUMBER: 08/99/813,1
PRIOR APPLICATION NUMBER: 08/991,862
PRIOR FILING DATE: 1997-12-16
PRIOR PLILING DATE: 1997-12-16
PRIOR PLILING DATE: 1997-05-23
NUMBER OF SEQ ID NOS: 17
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 7
           FILE REFERENCE: 29996.488/P001-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 ARRGIKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 ARRGTKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                       Ouery Match
Best Local Similarity 100.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    : PatentIn Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local Similarity 100.
Matches 14; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: PRT
ORGANISM: Human granulin
                                                                                                                                                                                                                                                                        ORGANISM: Human granulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQ ID NOS: 17
SOFTWARE: Patentin Ver. SEQ ID NO 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME/KEY: PEPTIDE
                                                                                                                                                                                                                                                                                                                      NAME/KEY: PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 6
US-09-824-647-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-824-807-7
                                                                                                                                                                                                                                                      TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                 FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 7, Application US/10281160

PUBLICANT: Servero 10: US20030108950A1

GENERAL INFORMATION:
APPLICANT: Servero Ginette
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILLE REPERENCE: 29966.488/P001.A

CURRENT APPLICATION NUMBER: US/08/991,862
PRIOR PILING DATE: 1998-08-17
PRIOR APPLICATION NUMBER: 08/863,862
PRIOR FILING DATE: 1997-05-23
FRIOR APPLICATION NUMBER: 08/863,862
PRIOR FILING DATE: 1997-05-23
SOFTWARE: PATENTIN UVET: 2.0

SEQ ID NO 7

SEQ ID NO 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS CURRENT APPLICATION NUMBER: US/10/218,509
CURRENT APPLICATION NUMBER: US/20/218,509
CURRENT FILING DATE: 2090-08-15
PRIOR FILING DATE: 1998-08-17
PRIOR FILING DATE: 1998-08-17
PRIOR FILING DATE: 1997-05-23
NUMBER OF SEQ ID NOS: 17
                                                                                                                                                                                                                                                                                                                                                            LOCATION: (1)...(14)
OTHER INFORMATION: Internal peptide of human GP88 used to develop
OTHER INFORMATION: neutralizing anti-human GP88 monoclonal antibody
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LOCATION: (1)...(14)
OTHER INFORMATION: Internal peptide of human GP88 used to develop
OTHER INFORMATION: neutralizing anti-human GP88 monoclonal antibody
US-10-281-160-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Serrero, Ginette
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          100.0%; Score 74; DB 9; I
100.0%; Pred. No. 1.6e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   100.0%; Score 74; DB 9; I
100.0%; Pred. No. 1.6e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; Sequence 7, Application US/09813156; Patent No. US20020061859A1; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 ARRGIKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 ARRGIKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 ARRGTKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 ARRGTKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best Local Similarity 100.
Matches 14; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 100.
Best Local Similarity 100.
Matches 14; Conservative
                                                                                                                                                                                                                                                                      TYPE: PRT
ORGANISM: Human granulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM: Human granulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME/KEY: PEPTIDE
                                                                                                                                                                                                                                                                                                                                        NAME/KEY: PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-10-281-160-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-813-156-7
                                                                                                                                                                                                                                                                                                                                                                                                                              US-10-218-509-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                               SEQ ID NO 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
```

Gaps

ö

Length 14; Indels

```
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LOCATION: (1)...(14)
OTHER INFORMATION: Internal peptide of human GP88 used to develop
OTHER INFORMATION: neutralizing anti-human GP88 monoclonal antibody.
                                                                                 APPLICANT: Serrero, Ginette
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE REFERENCE: 2996.488/P001-A
CURRENT APPLICATION NUMBER: US/09/824,807
CURRENT FILING DATE: 2001-04-04
PRIOR APPLICATION NUMBER: 08/991,862
PRIOR PELICATION NUMBER: 08/863,862
PRIOR FILING DATE: 1997-12-16
PRIOR FILING DATE: 1997-05-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; Sequence 17, Application US/09824647
; Publication No. US20020183270a1
; GENERAL INFORMATION:
   APPLICANT: Serrero, Ginette
; TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
; FILE REFERENCE: Z9996.488/P001-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100.0%; Score 74; DB 10; 100.0%; Pred. No. 1.6e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
Sequence 7, Application US/09824807 Patent No. US20020094966Al GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 ARRGTKCLRREAPR 14
```

Gaps

ö

Indels

Length 593;

100.0%; Score 74; DB 9; 100.0%; Pred. No. 7.8e-05;

Mismatches

ö

```
1 ARRGIKCLRREAPR 14
                                                                              Best Local Similarity 100.
Matches 14; Conservative
; ORGANISM: Human GP88 cDNA US-10-281-160-17
                                                                                                                                                                                                                                                  RESULT 9
US-09-813-156-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-824-807-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; ORGANISM: Hu
US-09-813-156-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LENGTH: 593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: PRT
                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                  ð
                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
GENERAL INFORMATION:
GENERAL INFORMATION:
GENERAL INFORMATION:
GENERAL INFORMATION:
GENERAL SETIECT,
GENERAL GENERAL GENERAL
TITLE OF INVENTION:
GENERAL SEPTICATION:
FILE REFERENCE:
20966, 488/P001-A
CURRENT FILING DATE:
2002-08-15
PRIOR PELICATION NUMBER:
08/991,862
PRIOR PELICATION NUMBER:
PRIOR PELICATION NUMBER:
PRIOR PELING DATE:
1998-08-17
PRIOR PELING DATE:
1997-05-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 17, Application US/10281160
Publication No. US20030108950A1
GENERAL INFORMATION
GENERAL INFORMATION:
GINGELTE
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE REFERENCE: 29996.488/F001-A
CURRENT APPLICATION NUMBER: US/10/281,160
CURRENT FILING DATE: 2002-10-28
PRIOR PILING DATE: 1998-08-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                 CURRENT FILING DATE: 2001-04-04
PRIOR APPLICATION NUMBER: 08/991,862
PRIOR PILING DATE: EARLIER APPLICATION NUMBER: 08/991,862
PRIOR PILING DATE: EARLIER FILING DATE: 1998-08-17
PRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER: 08/863,862
PRIOR FILING DATE: EARLIER FILING DATE: 1997-05-23
NUMBER OF SEQ ID NOS: 17
SOFTWARE: PALENTIN VET. 2.0
SEQ ID NO 17
LENGTH: 593
                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 593;
                                                                                                                                                                                                                                                                                                Length 593;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                        0; Indels
                                                                                                                                                                                                                                                                                              Score 74; DB 9; I
Pred. No. 7.8e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7.8e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0; Mismatches
                                                                                                                                                                                                                                                                                                                                        0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 74;
Pred. No.
  CURRENT APPLICATION NUMBER: US/09/824,647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR APPLICATION NUMBER: 08/863,862
PRIOR FILING DATE: 1997-05-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 17, Application US/10218509 Publication No. US20030092661A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         100.0%;
100.0%;
                                                                                                                                                                                                                                                                                          Query Match 100.0%;
Best Local Similarity 100.0%;
Matches 14; Conservative 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                111111111111111
566 ARRGIKCLRREAPR 579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 ARRGTKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                 1 ARRGTKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOFTWARE: PatentIn Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity 100.0
Matches 14; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOFTWARE: PatentIn Ver. 2.0
SEO ID NO 17
LENGTH: 593
TYPE: PRT
                                                                                                                                                                                                         ; TYPE: PRT; ORGANISM: Human GP88 CDNA
US-09-824-647-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; ORGANISM: Human GP88 cDNA
US-10-218-509-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NUMBER OF SEQ ID NOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-281-160-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 7
US-10-218-509-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQ ID NO 17
LENGTH: 593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              õ
                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                      g
```

```
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Serrero, Ginette
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE REPERENCE: 29996-1488/P001-A
CURRENT APPLICATION NUMBER: US/09/824,807
CURRENT FILING DATE: 2001-04-04
PRIOR PPLICATION NUMBER: 08/991,862
PRIOR PFLING DATE: 1997-12-16
PRIOR PRILING DATE: 1997-2-23
                                 GENERAL INFORMATION:

APPLICANT: SETTETO, GINETTE
TITLE DE INVENTION:
FILE REFERENCE: 20956.488/F2001-A
CURRENT APPLICATION NUMBER: US/09/813,156
CURRENT FILING DATE: 2001-03-21
PRIOR FILING DATE: 1997-12-16
PRIOR FILING DATE: 1997-12-16
PRIOR FILING DATE: 1997-05-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                         Length 593;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 593;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                               0: Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 10;
7.8e-05;
thes 0;
                                                                                                                                                                                                                                                                                                                                                                           7.8e-05;
                                                                                                                                                                                                                                                                                                                                                              DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                            Score 74;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 74;
Sequence 17, Application US/09813156
Patent No. US20020061859A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 17, Application US/09824807
Patent No. US20020094966A1
                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%;
                                                                                                                                                                                                                                                                                                                                                            100.0%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     566 ARRGIKCLRREAPR 579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 ARRGIKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQ ID NOS: 17
SOFTWARE: Patentin Ver. 2:0
SEQ ID NO 17
                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity 100...
Local Similarity 100...
                                                                                                                                                                                                                NUMBER OF SEQ ID NOS: 17
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 100.
Best Local Similarity 100.
Matches 14; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM: Human GP88 CDNA
                                                                                                                                                                                                                                                                                                            Human GP88 cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JS-09-824-807-17.
```

ö

```
US-10-281-160-5
US-10-281-160-5
Sequence 5, Application US/10281160
Publication No. US20030108950A1
GENERAL INFORMATION:
APPLICANT: SETERO. GINETLE
TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE REFERENCE: 2996.488/P001-A
CURRENT APPLICATION NUMBER: US/10/281,160
CURRENT FILING DATE: 1998-08-17
PRIOR APPLICATION NUMBER: US/08/991,862
PRIOR FILING DATE: 1998-08-17
PRIOR PELING DATE: 1997-05-23
APPLICANT: Serrero, Ginette
TITLE De INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE REFERENCE: 2099.6 48 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
FILE REFERENCE: 2099.6 48 KDA TUMORIER: US/10/218,509
CURRENT APPLICATION NUMBER: US/10/218,509
PRIOR PILING DATE: 1998-08-17
PRIOR FILING DATE: 1997-05-23
NUMBER OF SEQ ID NOS: 17
SOFTWARE: PATENTIN VET: 2.0
SEQ ID NOS: 17
LENGTH: 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LOCATION: (1)...(14)
COTHER INFORMATION: Internal peptide of mouse GP88 used to raise the OTHER INFORMATION: antisera against the GP88 used in the COTHER INFORMATION: immunoaffinity step.
US-10-218-509-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LCCATION: (1)..(14)
OTHER INFORMATION: Internal peptide of mouse GP88 used to raise the OTHER INFORMATION: antisera against the GP88 used in the OTHER INFORMATION: immunoaffinity step.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 53; DB 9; Length 14;
Pred. No. 0.0072;
2; Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 53; DB 9; Length 14;
Pred. No. 0.0072;
2; Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-813-156-5
; Sequence 5, Application US/09813156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        71.6%;
75.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 71.6%;
Best Local Similarity 75.0%;
Matches 9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQ ID NOS: 17
SOFTWARE: PatentIn Ver. 2.0
SEQ ID NO 5
LENGTH: 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity 75.07
المالية والمالية المالية الما
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3 RGTKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3 RGTKCLRKKIPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM: mouse granulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM: mouse granulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME/KEY: PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY: PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-10-281-160-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 5, Application US/09824647

| Sequence 5, Application US/09824647
| Publication No. US20020183270A1
| GENERAL INFORMATION:
| APPLICANT: Seriency, Ginette
| TITLE OF INVENTION: 88 KDA TUMORIGENIC GROWTH FACTOR AND ANTAGONISTS
| FILE REFERENCE: 29996.488/P001-A
| CURRENT FILING DATE: 2001-04-04
| PRIOR PILING DATE: EARLIER FILING DATE: 1998-08-17
| PRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER: 08/991,862
| PRIOR APPLICATION NUMBER: EARLIER FILING DATE: 1998-08-17
| PRIOR FILING DATE: EARLIER FILING DATE: 1997-05-23
| NUMBER OF SEQ ID NOS: 17
| SOFTWARE: Patentin Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCATION: (1)..(14)
OTHER INFORMATION: Internal peptide of mouse GP88 used to raise the OTHER INFORMATION: antisera against the GP88 used in the OTHER INFORMATION: immunoaffinity step.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                           GENERAL INFORMATION:
GENERAL INFORMATION:
TITLE OF INFORMATION:
TITLE OF INFORMATION:
TITLE OF INFORMATION:
FILE REPERENCE: FALS
CURRENT PILITING DATE:
CURRENT PILITING DATE:
FRICK FILING DATE:
PRIOR APPLICATION NUMBER: 60/124,270
FRICK FILING DATE: 2000-03-08
FRICK FILING DATE: 1999-03-12
NUMBER OF SEQ ID NOS: 1694
SOFTWARE: Patentin Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 621;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 53; DB 9; Length 14;
Pred. No. 0.0072;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 68; DB 10;
Pred. No. 0.00092;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0; Mismatches
                                                                  Sequence 1416, Application US/09925301
Patent No. US20020052308A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 5, Application US/10218509
Publication No. US20030092661A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 71.6%;
75.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     91.9%;
92.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity 75.0°,
9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 ARRGIKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 91.9
Best Local Similarity 92.9
Matches 13; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3 RGTKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: PRT ORGANISM: mouse granulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-925-301-1416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY: PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQ ID NO 1416
LENGTH: 621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-10-218-509-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-824-647-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH: 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
```

Gaps

ö

ö

Gaps

```
Fatent No. US20020061859A1
GENERAL INFORMATION:
APPLICAT'S SETTEC, Ginette
APPLICAT'S SETTEC, Ginette
FILE REFERENCE: 29996.488/P001-A
CURRENT APPLICATION NUMBER: US/09/813,156
CURRENT APPLICATION NUMBER: 08/091,862
PRIOR PILING DATE: 1997-12-16
PRIOR PLICATION NUMBER: 08/991,862
PRIOR PLILING DATE: 1997-05-23
NUMBER OF SEQ ID NOS: 17
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 5
LANGHRISH: A
TYPE: PRT
ORGANISM: mouse granulin
FEATURE:
NAME/RET: PETIDE
LOCATION: (1)...(14)
OTHER INFORMATION: Internal peptide of mouse GP88 used to raise the
CTHER INFORMATION: immunoaffinity step.
```

Gaps

ö

Query Match
71.6%; Score 53; DB 10; Length 14;
Best Local Similarity 75.0%; Pred. No. 0.0072;
Matches 9; Conservative 2; Mismatches 1; Indels

Search completed: July 8, 2003, 16:31:42 Job time: 13.641 secs

à a

```
GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
```

· protein search, using sw model OM protein 8, 2003, 16:19:45 ; Search time 14.1795 Seconds (without alignments) 94.918 Million cell updates/sec July Run on:

US-09-824-647-7 74 Title: Perfect score: Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 1 ARRGTKCLRREAPR 14 Scoring table:

283224 seqs, 96134422 residues Searched: 283224 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

PIR\_73:\*
1: pir1:\*
2: pir2:\*
3: pir3:\*
4: pir4:\* Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

#### SUMMARIES

•		Description	granulin precursor	epithelin/granulin	epithelin/granulin	nicotinate-nucleot	hypothetical prote	gastric mucin rela	sucrose-phosphate	RNA2 polyprotein -	hypothetical prote	hypothetical prote	exopolyphosphatase	MCM / cell divisio	hypothetical prote	hypothetical prote	acetyl-CoA carboxy	sucrose-phosphate		hypothetical prote	hypothetical prote	adenine deaminase-	mannosyl transfera	methyl-accepting c	hypothetical prote	sucrose-phosphate	sucrose-phosphate	hypothetical prote	sucrose-phosphate	ρι	hypothetical prote
		Ω	GYHU	C38128	B38128	A75577	T49514	T49513	T04062	S06187	T19782	992025	T50868	H84368	T08723	D70775	C75558	JQ1329	T02664	AG2138	T24824	C75580	AF2409	A87257	T22422	T51800	JC4783	F86182	T09837	T04103	E72680
		B :	1	7	~	~	7	~	7	~	7	~	~	~	~	7	~		7	٦	7	~	7	7	~	7	~	7	~	~	7
•		Match Length DB	593	589	589	365	327	422	1083	1324	327	378	200	831	118	147	187	1068	157	246	288	376	379	. 598	869	1047	1049	1064	1081	1084	123
фP	Query	Match	91.9	71.6	68.9	58.1	55.4	55.4	55.4	55.4	54.1	54.1	54.1	54.1	52.7	52.7	51.4	51.4	50.0	50.0	50.0	50.0	50.0	. 50.0	50.0	20.0	50.0	50.0	20.0	50.0	49.3
		Score	89	53	51	43	41	41	41	41	.40	40	40	40	39	. 39	38	38	37	37	37	. 37	37	37	37	37	37	37	37	37	36.5
	Result	No.	-	7	m	4	ഗ	9	7	æ	6	. 10	11	12	13	14	. 15	16	17	18	19	50	21	22	23	24	. 52	56	27	28	29

A; Molecule type: mRNA A; Residues: 1-406, 'R', 408-433, 'G', 435-453, 'G', 455-459, 'Q', 461-546, 'A', 548-566, 'R A; Cross-references: GB: M75161; NID: 9183612; PIDN: AAA58617.1; PID: 9183613 A; Note: this sequence has been revised in reference JC1284 R; Bateman, A.; Belcourt, D.; Bennett, H.; Lazure, C.; Solomon, S.

A; Accession: A38118

t, H.; Lazure, C.; Solomon, S. 1161-1168, 1990

A;Title: Granulins, a novel class of peptide from leukocytes A;Reference number: A36698, MUID:91097544; PMID:2268320

Biochem. Biophys. Res. Commun. 173,

A;Residues: 364-367,'X',369-385,'H',387-396 <BA3> A;Note: this protein was purified and characterized as granulin C A;Accession: D36698

A; Molecule type: protein

A; Residues: 442-446, 'XDTSS', 456-458, 'DG' <BA4>

A.Note: this protein was purified and characterized as granulin A.Accession: B36698

A; Molecule type: protein A; Residues: 281-336 <BAT>

A; Accession: A36698

A;Molecule type: protein A;Residues: 206-218,'H',220-233 <BA2> A;Note: this protein was purified and characterized A;Accession: C36698

granulin

LSU ribosomal prot hypothetical prote	hypothetical prote porphobilinogen de protein R09E10.1 [	hypothetical prote HYA22 protein - hu r409@ protein - ri	sucrose-phosphate DNA-binding protei	DNA-directed kNA p probable vitelloge ALR protein - huma	ALR protein - huma bcl-2-associated p
AH3346 T24091	F71294 G87257 H88808	T15837 JC5707 T03960	S72650 S61413 T49868	S35548 T13171 T03455 '	T03454 C47538
77	000	000	000	000	77
201	307 322 326	336 338 343	348 402 1174	1210 1984. 4957	5262 41
48.6	48.6	6.84	48.6 48.6 48.6	488 88.6 6.6 6.0	48.6
36 36	36	36.8	36 36	36 36 36	36 35
30	333	36 36 37	338	4 4 4 1 2 2 8	44

## ALIGNMENTS

```
Riplowman, G.D.; Green, J.M.; Neubauer, M.G.; Buckley, S.D.; McDonald, V.L.; Tod: J. Biol. Chem. 267, 13073-13078, 1992
A; Title: The epithelin precursor encodes two proteins with opposing activities of A; Reference number: A38128; MUID:92317004; PMID:1618805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Cross references: GB:X62320; NID:g31192; PIDN:CAA44196.1; PID:g31193
R;Bhandari, V.; Palfree, R.G.E.; Bateman, A.
Proc. Natl. Acad. Sci. U. S.A. 89; 1715-1719; 1992
A;Title: Isolation and sequence of the granulin precursor cDNA from human bone m. A;Reference number: A38118; MUID:92179253; PMID:1542665
                                                                     N;Contains: granulin A; granulin B; granulin C; granulin D; granulin E; granulin C;Species: Homo sapiens (man) C;Date: 30-Sep-1992 #sequence_revision 03-May-1996 #text_change 08-Dec-2000 C;Accession: JC1284; A38128; A38118; A36598; B36698; C36698; D36698; A56873
                                                                                                                                                                                                                                                                               Biochem. Biophys. Res. Commun. 188, 57-63, 1992
A: Fitle: Structure and chromosomal location of the human granulin gene. A: Reference number: JC1284; MUID:93038704; PMID:1417868
granulin precursor [validated] - human
                                           N; Alternate names: epithelin
                                                                                                                                                                                                                                                          R; Bhandari, V.; Bateman, A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -593 <BHA>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule type: mRNA
A; Residues: 1-593 <PLO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Accession: A38128
                                                                                                                                                                                                                                                                                                                                                                                                                     A; Accession: JC1284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Residues: 1
```

Gaps

ö

变.

```
C; Species: Rattus norvegicus (Norway rat)
C; Species: Rattus norvegicus (Norway rat)
C; Sate: 10-Jul-1992, #sequence_revision 10-Jul-1992 #text_change 20-Aug-1999
C; Accession: B38128; A36199; B36698; T53272
R; Plowman, G.D.; Green, J.M.; Neubauer, M.G.; Buckley, S.D.; McDonald, V.L.; Todarc
J. Biol. Chem. 267, 13073-13078, 1992
A; Title: The epithelin precursor encodes two proteins with opposing activities on e
A; Reference number: A38128; MUID: 92317004; PMID: 1618805
A; Recession: B38128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Molecule type: mRNA.
;Residues: 1-589 <-PLO>
;Cross-references: GB:X62322; NID:956108; PIDN:CAA44198.1; PID:956109
;Cross-references: GB:X62322; NID:956108; PIDN:CAA44198.1; PID:956109
;Shoyab, M.; McDonald, V.L.; Byles, C.; Todaro, G.J.; Plowman, G.D.
roc. Natl. Acad. Sci. U.S.A. 87, 7912-7916, 1990
;Title: Epithelins 1 and 2: isolation and characterization of two cysteine-rich gr.;Recience number: A36199; MUID:91045907; PMID:2236009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               :Title: The complementary deoxyribonucleic acid sequence, tissue distribution, and Reference number: 153272; MUID:94062640; PMID:8243292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  nicotinate-nucleotide-dimethylbenzimidazole phosphoribosyltransferase - Deinococcus
C,Species: Deinococcus radiodurans
C,Date: 03-Dec-1999 %sequence_revision 03-Dec-1999 %text_change 02-Mar-2001
                                                                                                                     A; Wolecule type: protein
A; Residues: 18-19,'X',21-25,'X',27-29,'XX',32;'XXX',119-127;152-154,'DXK',158-161,'
C; Superfamily: granulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C.Accession: A75577
R.White, O.; Eisen, J.A.; Heidelberg, J.F.; Hickey, E.K.; Peterson, J.D.; Dodson, R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Residues: 1-200,'S',203-388,'M',390-589 <RES>
A;Cross-references: GB:M97750; NID:g204223; PIDN:AAA16903.1; PID:g204224
                                                                                                                                                                                                                                                                                                                                              Length 589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bateman, A.; Belcourt, D.; Bennett, H.; Lazure, C.; Solomon, ochem. Biophys. Res. Commun. 173, 1161-1168, 1990.
                                                                                                                                                                                                                                                                                                                                                                                                                                                              1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Title: Granulins, a novel class of peptide from leukocytes. Reference number: A36698; MUID:91097544; PMID:2268320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  'SB',310-324,'T',326,'X',328,'Q' <BAT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4;Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                         DB 2;
0.12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 51; DB 2;
Pred. No. 0.29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ٠.
                                                                                                                                                                                                                                                                                                                                              Score 53;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          68.9%;
66.7%;
                                                                                                                                                                                                                                                                                                                                         Query Match 71.6%;
Best Local Similarity 75.0%;
Matches 9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          :||||||:: ||
564 KGTKCLRKKTPR 575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3 RGTKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3 RGTKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Molecule type: protein
Residues: 205-226 <SH2>
Bateman, A.: Belcourt, I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               lecule type: protein
sidues: 280-300 <SHO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local Similarity
nes 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C; Superfamily: granulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Molecule type: mRNA
                                                                        A;Status: preliminary
                      A; Accession: A46705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Accession: B36199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Accession: E36698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Accession: I53272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            윱
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Parthelin/granulin precursor - mouse

W.Alternate names: acrogranin; Pc-cell-derived growth factor
C.Species: Mus musculus (house mouse)
C.Species: Mus musculus (house mouse)
C.Date: 10-Jul-1992 #sequence_revision 10-Jul-1992 #text_change 20-Aug-1999
C.Date: 10-Jul-1992 #sequence_revision 10-Jul-1992 #text_change 20-Aug-1999
C.Accession: Callals; 332503; 149468; A46705
S.Plowman, G.D.; Green, J.M.; Neubauer, M.G.; Buckley, S.D.; McDonald, V.L.; Todaro, G.J.
J. Biol. Chem. 267, 13073-13078, 1992
J. Biol. Chem. 267, 13073-13078, 1992
A.Fitle: The epitchalin precursor encodes two proteins with opposing activities on epithe A.Reference number: A38128; MUID:92317004; PMID:1618805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A:Title: Exon/intron organization of the gene encoding the mouse epithelin/granulin pred
A:Reference number: S32503; MUID:93245991; PMID:8482392
A:Accession: S32503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Molecule type: DNA
A; Molecule type: DNA
R; Residues: 18-349, 'L', 351-589 <BAB>
R; Baba, T.; Hoff, H.B.
Mol. Reprod. Dev. 34, 233-243, 1993
A; Title: Asrogramin, an acrosomal cysteine-rich glycoprotein, is the precusor of the grd
A; Reference number: 148141; MUID:93228994; PMID:8471244
A; Accession: 149468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A:Title: Purification of an autocrine growth factor homologous with mouse epithelin pred
A:Reference number: A46705; MUID:93266526; PMID:8496151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Cross-references: GDB:136006; OMIM:138945
A;Map position: 17pter-17qter
A;Introns: 46/3; 88/3; 117/1; 154/3; 200/1; 236/3; 279/1; 311/3; 393/3; 471/3; 548/3
A;Introns: 46/3; 98/3; 117/1; 154/3; 200/1; 236/3; 279/1; 311/3; 393/3; 471/3; 548/3
C;Superfamily: granulin
C;Keywords: glycoprotein; tandem repeat
F;1-17/Domain: signal sequence fetatus predicted <a href="Mailto:Killonalin">Killonalin: signal sequence fetatus predicted <a href="Mailto:Killonalin">Mailto:Killonalin: signal sequence fetatus predi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
R; Kardana, A.; Bagshawe, K.D.; Coles, B.; Read, D.; Taylor, M.
Br. J. Cancer 67, 686-692, 1993
A; Fitle: Characterisation of UGP and its relationship with beta-core fragment.
A; Reference number: A56873; MUID:93229246; PMID:8471426
A; Recession: A56873
A; Molecule type: protein
A; Residues: 281-283, X', 285-289, S', 291-295 <KAR>
A; Experimental source: urine
A; Note: sequence extracted from NCBI backbone (NCBIP:129524)
C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Residues: 1.250, L', 252-253, 'V', 255-349, 'L', 351-401, 'SA', 404-589 < RES> A; Cross-references: GB:MB6736; NID:g191766; PIDN:AAA37191.1; PID:g191767 B; Zhou, J.; Gao, G.; Crabb, J.W.; Serrero, G.
J. Blol. Chem. 268, 10863-10869, 1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Molecule type: mRNA
A; Residues: 1-589 <-PLO>
A; Cross-references: GB: X62321; NID:950851; PIDN:CAA44197.1; PID:950852
R; Baba, T.; Nemoto, H.; Watanabe, K.; Arai, Y.; Gerton, G.L.
FEBS Lett. 322, 89-94, 1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 68; DB 1; Length 593;
Pred. No. 0.00025;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               F.1.17 Domain: signal sequence status predicted <SiG>F.18-593/Product: granulin fstatus predicted <AMATON F.18-593/Product: granulin fstatus predicted <AMATON F.18-44/Product: paragranulin fstatus appenimental <AMATON F.18-413/Product: granulin f fstatus predicted <GRO>F.12-179/Product: granulin G fstatus predicted <GRO>F.12-179/Product: granulin B fstatus specimental <GRO>F.281-336/Product: granulin A fstatus experimental <GRO>F.36-417/Product: granulin C fstatus experimental <GRO>F.442-466/Product: granulin B fstatus predicted <GRO>F.442-466/Product: granulin B fstatus predicted <GRO>F.481-486/Product: granulin B fstatus predicted <GRO>F.518-573/Product: granulin B fstatus predicted <GRO>F.518-573/Product: granulin B fstatus predicted <GRO>F.518-773/Product: granulin B fstatus Producted <GRO>F.518-773/Producted <GRO>F.518-773/Producted <GRO>F.518-773/Producted <GRO>F.518-773/Producted <GRO>F.518-773/Producted <GRO>FSTATUS <FSTATUS <FSTATU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A,Gene: GDB:GRN
A;Cross-references: GDB:136006; OMIM:138945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             91.9%;
llarity 92.9%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                566 AARGTKCLRREAPR 579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 ARRGIKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best_Local Similarity
Matches 13; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5
```

ö

Gaps

Gaps

ö

Length 422;

```
C;Accession: T04062
R;Bevan, M.; Murphy, G.; Ridley, P.; Hudson, S.; Bancroft, I.; Mewes, H.W.; Maye.
Bubuitted to the Protein Sequence Database, March 1999
A;Reference number: Z15184
A;Accession: T04062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C;Superfamily: sucrose-phosphate synthase; sucrose/sucrose-phosphate synthase hor F;230-714/Domain: sucrose/sucrose-phosphate synthase homology <SSPS>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Introns: 86/3; 116/3; 255/3; 322/2; 482/3; 526/3; 570/3; 629/3; 647/3; 668/3; A;Note: F28M11.40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Residues: 1-1324 <BRA>
A; Cross-references: EMBL:X15163; NID:959347; PIDN:CAA33255.1; PID:959348
A; Note: part of this sequence, including the amino end of the coat protein, was
                                                                                                                                                                                                                                                                              sucrose-phosphate synthase homolog F28M11.40 - Arabidopsis thaliana
C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Date: 30-Apr-1999 #sequence_revision 30-Apr-1999 #text_change 16-Jul-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ;Experimental source: cultivar Columbia; BAC clone F28M11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 41; DB 2;
Pred. No. 31;
0; Mismatches
                        DB 2;
13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 41; DB 2
Pred. No. 37;
1; Mismatches
                                                                       2; Mismatches
                        Score 41;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Residues: 1-1083 <BEV>
A; Cross-references: EMBL: AL049487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          55.4%;
58.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     y Match
Local Similarity 61.5%;
hes 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  468 RRGVSCLGRYMPR 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2 RRGTKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      127 RHGTRCLRHGGP 138
                                                                                                                                                :|| :||| | |
370 QRGPQCLRRRPP 381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 55.4
Best Local Similarity 58.3
Matches 7; Conservative
                                                 Best_Local Similarity 58.3
Matches 7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2 RRGTKCLRREAP 13
                                                                                                                   2 RRGTKCLRREAP 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Map position; segment S2
A;Introns: 960/2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            C; Keywords: polyprotein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Molecule type: mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Map position: 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Molecule type:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local S
Matches 8
                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                        ò
                                                                                                                                                               g
, M.; Shen, M.; Vamathevan, J.J.; Lam, P.; McDonald, L.; Utterback, T.; Zalewski, C.; Md
S.; Smith, H.O.; Venter, J.C.; Fraser, C.M.
Science 286, 1571-1577, 1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Accession: T49513
;Schulte, U.; Aign, V.; Hoheisel, J.; Brandt, P.; Fartmann, B.; Holland, R.; Nyakatura,
ubmitted to the Protein Sequence Database, May 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    R;Schulte, U.; Aign, V.; Hoheisel, J.; Brandt, P.; Fartmann, B.; Holland, R.; Nyakatura, submitted to the Protein Sequence Database, May 2000
A;Reference number: 225022
A;Accession: T49514
                                                                                                                                         A, Status: preliminary
A, Molecule type: DNA
A, Residues: 1-365 <MHI>
A, Cross-references: GB:AE001863; GB:AE001825; NID:g6460670; PIDN:AAF12397.1; PID:g646069
                                                                                                                                                                                                                                                                                                                                    C; Superfamily: Pseudomonas nicotinate-nucleotide-dimethylbenzimidazole phosphoribosylträ
                                                                       A;Title: Genome sequence of the radioresistant bacterium Deinococcus radiodurans R1.
A;Reference number: A75250; MUID:20036896; PMID:10567266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N.Alternate names: protein B14D6.650
C;Species: Neurospora crassa
C;Date: 02-Jun-2000 #sequence_revision 02-Jun-2000 #text_change 02-Jun-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Species: Neurospora crassa
Date: 02-Jun-2000 #sequence_revision 02-Jun-2000 #text_change 02-Jun-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Cross-references: EMEL:AL356173; GSPDB:GN00116; NCSP:B14D6.650
A;Experimental source: BAC clone B14D6; strain OR74A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Cross-references: EMBL:AL356173; GSPDB:GN00116; NCSP:B14D6.660
A;Experimental source: BAC clone B14D6; strain OR74A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 327;
                                                                                                                                                                                                                                                                                                                                                                                Score 43; DB 2; Length 365;
Pred. No. 5.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             pothetical protein B14D6.660 [imported] - Neurospora crassa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Jastric mucin related protein [imported] - Neurospora crassa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                 1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 41;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      55.4%;
                                                                                                                                                                                                                                                                                                                                                                                58.1%;
ilarity 81.8%;
Conservative
                                                                                                                                                                                                                                         A; Experimental source: strain R1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              :|| :||| |
275 QRGPQCLRRRPP 286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      146 RRGTRNLRREA 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity 58.3
hes 7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2 RRGTKCLRREAP 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2 RRGTKCLRREA 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Reference number: 225022
                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
Matches 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-327 <SCH>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Status: preliminary
A; Molecule type: DNA
A; Residues: 1-422 <SCH>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Gene: NCSP:B14D6.650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Gene: NCSP: B14D6.660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Map position: 6
A; Introns: 93/2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Map position: 6
                                                                                                                                                                                                                                                                                                              A; Map position: 2
                                                                                                                                                                                                                                                                                     A; Gene: DRA0240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              : Genetics:
                                                                                                                                                                                                                                                               Genetics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
```

ö

Gaps

5; Indels

Length 1083;

ö

Gaps

ö

Length 1324;

Gaps

. 3

Indels

Length 500;

```
R;Ng, W.V.; Kennedy, S.P.; Mahairas, G.G.; Berquist, B.; Pan, M.; Shukla, H.D.; La: Leithauser, B.; Keller, K.; Cruz, R.; Danson, M.J.; Hough, D.W.; Maddocks, D.G.; Jung, K.H.; Alam, M.; Freitas, T.
Proc. Natl. Acad. Sci. U.S.A. 97, 12176-12181, 2000
A;Authors: Hou, S.; Daniels, C.J.; Dennis, P.P.; Omer, A.D.; Ebhardt, H.; Lowe, T.I.
A;Title: Genome sequence of Halobacterium species NRC-1.
A;Reference number: A84160; MUID:20504483; PMID:11016950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Cross-references: GB:AE004437; NID:g10581599; PIDN:AAG20316.1; GSPDB:GN00138
C;Genetics:
A;Gene: mcm
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C; Species: Homo sapiens (man)
C; Date: 11-Jun-1999 #sequence_revision 11-Jun-1999 #text_change 13-Aug-1999
C; Accession: 108729
R; Roehrer, K.; Beyer, A.; Mewes, H.W.; Gassenhuber, J.; Wiemann, S. submitted to the Protein Sequence Database, March 1999
A; Reference number: 216473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                C;Species: Halobacterium sp. NRC-1
C;Date: 02-Feb-2001 #sequence_revision 02-Feb-2001 #text_change 02-Feb-2001
C;Accession: H8436
                                                                                                                                                                                                                                                                                                                                                                                                                                   MCM / cell division control protein 21 [imported] - Halobacterium sp. NRC-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       D70775
hypothetical protein Rv1312 - Mycobacterium tuberculosis (strain H37RV)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Experimental source: fetal kidney; clone DKFZp566D193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    hypothetical protein DKF2p566D193.1 - human (fragment)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 39; DB 2;
Pred. No. 9.9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5
                                                                                                                                         Score 40; DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ore 40; DB 3
ed. No. 37;
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1; Mismatches
                                                                                                                                                                                                2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 40;
Pred. No.
                                                                                                                                                                         Pred. No
  A; Experimental source: strain IL144 C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      52.7%;
77.8%;
                                                         A;Gene: ppx
C;Superfamily: exopolyphosphatase
                                                                                                                                         54.18;
61.58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              54.1%;
66.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Cross-references: EMBL:AL050051
                                                                                                                  Query Match
Best Local Similarity 61.5.
Best Local 8; Conservative
                                                                                                                                                                                                                                                                                   338 RRATKVWKREAP 349
                                                                                                                                                                                                                                                    2 RRGTKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local Similarity 66.7
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2 RRGIKCLRREAP 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4 GTKCLRREA 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   || |||:||
GTSCLROEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Molecule type: mRNA
A; Residues: 1-118 <KOE>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Molecule type: DNA
Residues: 1-831 <STO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Note: DKF2p566D193.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Accession: H84368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Accession: T08723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Genetics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                     a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 10

G70766

hypothetical protein Rv2084 - Mycobacterium tuberculosis (strain H37RV)

C;Species: Mycobacterium tuberculosis

C;Date: 17-Jul-1998 #sequence_revision 17-Jul-1998 #text_change 20-Jun-2000

C;Accesslon: G70766

R;Cole, S. T.; Brosch, R.; Parkhill, J.; Garnier, T.; Churcher, C.; Harris, D.; Gordon, S; Connor, R.; Davies, R.; Deviin, K.; Feltwell, T.; Gentles, S.; Hamlin, N.; Holroyd, S; Connor, R.; Davies, T.; Rutter, S.; Seeger, K.; Skelton, S.; Squares, S.

Nature 393, 537-544, 1998

A;Authors: Sqares, R.; Sulston, J.E.; Taylor, K.; Whitehead, S.; Barrell, B.G.

A;Title: Deciphering the biology of Mycobacterium tuberculosis from the complete genome A;Reference number: A70500; MUID:98295987; PMID:9634230

A;Status: preliminary; nucleic acid sequence not shown; translation not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       exopolyphosphatase [imported] - Rubrivivax gelatinosus
C;Species: Rubrivivax gelatinosus
C;Species: Rubrivivax gelatinosus
C;Species: 21-Jul-2000 #sequence_revision 21-Jul-2000 #text_change 18-Aug-2000
C;Accession: T50868
R;Nagashima, K.V.; Igarashi, N.; Harada, J.; Nagashima, S.; Matsuura, K.; Shimada, K.
submitted to the EMBL Data Library, November 1999
A;Description: Determination of Nucleotide Sequences of Rubrivivax gelatinosus Photosynt
A;Reference number: 225270
A;Accession: T50868
A;Cross-references: EMBL;AB034704; PIDN:BAA94021.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Cross-references: GB:Z73966; GB:AL123456; NID:g3261577; PIDN:CAA98196.1; PID:g1370250 A;Experimental source: strain H37Rv C; Genetics: C; Genetics: A;Gene: Rv2084 C;Superfamily: Mycobacterlum tuberculosis hypothetical protein Rv2084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                   A; Cross-references: EMBL: Z80215; PIDN: CAB02276.1; GSPDB: GN00019; CESP: C36B1.11
C;Species: Caenorhabditis elegans
C;Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 15-Oct-1999
C;Accession: T19782
S;Lennard, N.
submitted to the EMBL Data Library, September 1996
A;Reference number: Z19176
A;Accession: T19782
A;Accession: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           54.1%; Score 40; DB 2; Length 327; 53.8%; Pred. No. 16; tive 3; Mismatches 3; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 40; DB 2; Length 378;
Pred. No. 18;
0; Mismatches 4; Indels
                                                                                                                                                                                                                                                                                                                                                                                              A;Map position: 1
A;Introns: 83/3; 125/3; 174/3; 197/1; 261/3; 323/2
                                                                                                                                                                                                                                                                                                             A; Experimental source: clone C36Bl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    54.1%;
71.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     306 ARRGISRGRRCAPR 319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 ARRGTKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        :|| |:|||:|
SRRFEMCIRRESP 286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 ARRGTKCLRREAP 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 54.1
Best Local Similarity 71.4
Matches 10; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local Similarity 53.8
Matches 7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Molecule type: DNA
A; Residues: 1-378 <COL>
                                                                                                                                                                                                                             A; Molecule type: DNA
A; Residues: 1-327 <WIL>
                                                                                                                                                                                                                                                                                                                                                                 A; Gene: CESP: C36B1.11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                             C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
```

ö

Gaps

ö

Length 831;

ö

Gaps

ő

Length 118;

÷.

```
R;Cole, S.T.; Brosch, R.; Parkhill, J.; Garnier, T.; Churcher, C.; Harris, D.; Gordon, S.; Connor, R.; Davies, R.; Devlin, K.; Feltwell, T.; Gentles, S.; Hamlin, N.; Holroyd, S. Rajandream, M.A.; Rogers, J.; Rutter, S.; Seeger, K.; Skelton, S.; Squares, S. Nature 393, 537-544, 1998
A;Authors: Sqares, R.; Sulston, J.E.; Taylor, K.; Whitehead, S.; Barrell, B.G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            R;White, O.; Eisen, J.A.; Heidelberg, J.F.; Hickey, E.K.; Peterson, J.D.; Dodson, R.J.; , M.; Shen, M.; Vamathevan, J.J.; Lam, P.; McDonald, L.; Utterback, T.; Zalewski, C.; Ma
S.; Smith, H.O.; Venter, J.C.; Fraser, C.M.
Science 286, 1571-1577, 1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Cross-references: GB:AE001874; GB:AE000513; NID:96457778; PIDN:AAF09708.1; PID:9645778; Experimental source: strain R1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           acetyl-CoA carboxylase, bitoin carboxyl carrier protein - Deinococcus radiodurans (strai
C;Species: Deinococcus radiodurans
                                                                                                                                                                                                                                                                                                                                                                                              A;Cross-references: GB:273419; GB:AL123456; NID:93261573; PIDN:CAA97745.1; PID:91322436
A;Experimental source: strain H37Rv
C;Genetics:
                                                                                                                                                           A; Authors: Sqares, R.; Sulston, J.E.; Taylor, K.; Whitehead, S.; Barrell, B.G. A; Title: Deciphering the biology of Mycobacterium tuberculosis from the complete genome A; Reference number: A70500; MUID:98295987; PMID:9634230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Title: Genome sequence of the radioresistant bacterium Deinococcus radiodurans R1. Reference number: A75250; MUID:20036896; PMID:10567266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Map position: 1
C;Superfamily: biotin carboxyl carrier protein; lipoyl/blotin-binding homology
                                                                                                                                                                                                                                                                                                                 A;Status: preliminary; nucleic acid sequence not shown; translation not shown A;Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Date: 03-Dec-1999 #sequence_revision 03-Dec-1999 #text_change 17-Mar-2000
C;Species: Mycobacterium tuberculosis
C;Date: 17-Jul-1998 #sequence_revision 17-Jul-1998 #text_change 20-Jun-2000
C;Accession: D70775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 39; DB 2; Length 147;
Pred. No. 12;
3; Mismatches 4; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2; Length 187;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 38; DB 2
Pred. No. 22;
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Search completed: July 8, 2003, 16:29:31
Job time : 16.1795 secs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   52.7%;
50.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 51.4%;
Best Local Similarity 53.8%;
Matches 7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 ARRGTKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  :||| : : | |||
78 SRRGVEIISRRAPR 91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11 : 11 | 11:
37 RRSPQCLPRSAPQ 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2 RRGTKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
Matches 7; Conserve
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Molecule type: DNA
Residues: 1-187 <WHI>
                                                                                                                                                                                                                                                                                                                                                                                    A; Residues: 1-147 <COL>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Accession: C75558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Gene: Rv1312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Gene: DR0118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Accession:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
```

**'**0

```
GenCore version 5.1.6 Copyright (c) 1993 - 2003 Compugen Ltd.
```

OM protein - protein search, using sw model

July 8, 2003, 16:16:30; Search time 6.82051 Seconds (without alignments) 85.136 Million cell updates/sec Run on:

Title: Perfect score: Sequence:

US-09-824-647-7 74 1 ARRGTKCLRREAPR 14

Scoring table:

112892 seqs, 41476328 residues Searched:

BLOSUM62 Gapop 10.0 , Gapext 0.5

112892 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

SwissProt\_40:\* Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

### SUMMARIES

	tion	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	h granulins	mus musculu	r granulins	deinococcus	hungarian q	mycobacteri	mycobacteri	avian adeno	ralstonia s	mus musculu	homo sapien	zea mays (m	arabidopsis	oryza sativ	craterostig	treponema p	homo sapten	schizosacch	drosophila	homo sapien	shope fibro	escherichia	bacteriopha	mus musculu	homo sapien	arabidopsis	bos taurus	emericella	drosophila	homo sapten	rhizobium s	mycobacteri	
	Description		P28799	P28798	P23785	Q9ryr8	P13026	010692	010620	064751	Q8xzg9	09czw5	014699	P31927	Q9ff17	043802	.004933	083684	015194	202061	P98163	007815	606560	P75678	P36932	007105	060299	005609	003368	000757	P98081	P81534	P55551	P53432	, 000, 10
																									-										
			GRN_HOMAN	GRN_MOUSE	GRN_RAT	COBT_DEIRA	POL2_GCMV	KK84_MYCTU	YD12_MYCTU	OPOL_ADEG1	YE26_RALSO	OM70_MOUSE	Y084_HUMAN	SPS_MAIZE	ALG6_ARATH	SPS_ORYSA	SPS2_CRAPL	Y678_TREPA	NIF1_HUMAN	RPB2_SCHPO	YL_DROME	BAXC_HUMAN	VH21_SFVKA	KKFA_ECOLI	VINT_BPP2	GDF9_MOUSE	Y552_HUMAN	CTR1_ARATH	BLVR_BOVIN	CHSB_EMENI	DAB_DROME	BD03_HUMAN	Y4LK_RHISN	YD12_MYCLE	
	DB	-	7	7	7	7	1	1	7	1 L	7	7	7	-	1	7	-	7	-	ı.	~	-	-	7	-	-	7	7	-	7	1	-	1	7	•
	Query Match Length D		593	589	588	365	1324	380	147	1121	118	611	648	1068	533	1049	1081	307	340	1210	1984	41	158	287	337	441	613	821	843	916	2411	29	132	147	•
æ	Query Match		91.9	71.6	68.8	58.1	55.4	54.1	52.7	52.7	51.4	51.4	51.4	51.4	50.0	50.0	50.0	48.6	48.6	48.6	48.6	47.3	47.3	47.3	47.3	47.3	47.3	47.3	47.3	47.3	47.3	45.9	45.9	45.9	
	Score		68	53	51	43	41	40	39	39	38	38	38	. 38	37.	37	37	36	36	36	36	35	35	35	35	35	35	35	35	35	35	34	34	34	,
	Result No.		T	7	٣	4	2	9	7	œ	6	10	11	12	. 13	14	. 15	16	17	18	19	50	. 21	22	23	24	25	56	27	. 82	29	30	31	32	

P29129 pseudorable	Q9zn70 pseudomonas	P51957 homo sapien	P40578 saccharomyc	P03833 klebsiella	P03189 epstein-bar	Q05017 oryctolagus	Q05318 ebola virus	O54898 rattus norv	. 043497 homo saplen	P17053 paramecium	
									•		
ICPO_PRVIF	PPX_PSEAE	NEK4_HUMAN	MGA2_YEAST	NIFJ_KLEPN	V120_EBV	PHLX_RABIT	RRPL_EBOZM	CCAG_RAT	CCAG_HUMAN	G168_PARPR	
	Н	-	-	Н	ч	Н	Н	-	н	ч	
410	206	841	1113	1111	1239	1458	2212	2254	2377	2704	
45.9	45.9	45.9	45.9	45.9	45.9	45.9	45.9	45.9	45.9	45.9	1
34	34	34	34	34	34.	34	34	34	34	34	
32	36	37	38	39	40	41	42	43	44	45	
	410 1 ICPO_PRVIF P29129	410 1 ICPO_PRVIF 506 1 PPX_PSEAE Q9zn70 p	410 1 ICPO_PRVIF P29129 506 1 PPX_PSRAE Q92n70 841 1 NEK4_HUMAN P51957	410 1 ICPO_PRVIF P29129 506 1 PPX_PSEAE Q9zn70 841 1 NEK4_HUMAN P51957 1113 1 MGA2_YEAST P60578	410 1 ICPO_PRVIF P29129 506 1 PPX_PSEAE Q9zn70 841 1 NEK4_HOWAN P51957 1113 1 MKG2_YEAST P40578 1171 1 NIFJ_KLEPN P03833	410 1 ICPO_PRVIF P29129 506 1 PPX_PSEAE Q92n70 841 1 NEK4_HUMAN P51957 1113 1 MGA2_YEAST P40578 1171 1 NIFJ_KLEPN P03189 1239 1 V120_EBV P03189	410 1 ICPO_PRVIF P29129 506 1 PPX_PSEAE Q92n70 841 1 NEK4_HUMAN P20577 1113 1 MGA2_YEAST P40578 1171 1 NIFJ_KLEPN P03833 1139 1 V120_EBV P03833 1458 1 PHLX_RABIT Q050\$\$\$7\$	410 1 ICPO_PRVIF P29129 F	410 1 ICPO_PRVIF P29129 506 1 PPX_PSEAE Q92n70 841 1 NEK4_HOWAN P51957 1113 1 MGA2_YEAST P6578 1171 1 NIFY_KLEPN P03833 1239 1 V120_EBV P03189 1458 1 PHLX_RABIT Q05318 2254 1 CCAG_RAT G5189	410 1 ICPO_PRVIF P29129 506 1 PPR_PSEAE Q92n70 841 1 NEK4_HUMAN P40578 1113 1 MGA2_YEAST P40578 1171 1 NIFJ_KLEPN P40578 1239 1 V120_EBV P031893 1458 1 PHLX_RABIT Q05518 2212 1 RRPL_EBOZM Q05918 2377 1 CCAG_RAT O4898	35         34         45.9         410         1         ICPO_PRVIF         P29129         pseudorable           36         34         45.9         506         1         PPX_PSEAE         Q92770         pseudomonas           36         34         45.9         1813         1         NEK4_HUMAN         P40576         sapten           39         34         45.9         1171         1         NETZ_EAST         P40578         saccharomyc           40         34         45.9         1171         1         NITZ_EBN         P03189         spetein-bar           41         34         45.9         1458         1         PLAL_EBOZ         Q05318         ebola virus           42         34         45.9         2212         1         RRPL_EBOZ         C54898         eattus         nrv           43         45.9         224         1         CCAG_HUMAN         C43499         nrv           44         34         45.9         224         1         CCAG_HUMAN         C43499         nrv           45         34         45.9         2704         1         G168_PARPR         C043497         norv

# ALIGNMENTS

Ţ

```
Cytokine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PEPTIDE
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CHAIN
       SOLUTION OF THE PROPERTY OF TH
                                                                                                                                                                                                                                                                                                                   This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its way non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
FUNCTION: GRANULINS HAVE POSSIBLE CYTOKINE-LIKE ACTIVITY. THEY MAY PILAY A ROLD IN INFLAMMATION, WOUND REPAIR, AND TISSUE REMODELING. FUNCTION: GRANULIN A PROMOTES PROLIFERATION OF THE EPITHELIAL CELL LINE A431 IN CUTUME WHILE GRANULIN B ACTS AS AN ANTAGONIST OF GRANULIN B, INHIBITING THE GROWTH.

ALTERNATIVE PRODUCTS: 2 isoforms; 1 (shown here) and 2; may be produced by alternative splicing.

TISSUE SPECIFICITY: IN WYELGGENOUS LEUKENIC CELL LINES OF PROMONOCTIC, PROMYELCGITY: AND VERY STRONGLY IN PROBYTHELIAL CELL LINES. PRESENT BIRROBLASTS, AND VERY STRONGLY IN EPITHELIAL CELL LINES. PRESENT OF ANY OF THE CONTRACT OF THE CONTRAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PROSITE; PS00799; GRANULINS; 7.
Cytokine; Repeat; Glycoprotein; Signal; Alternative splicing; Polymorphism.

1 17 POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 593;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S -> H (IN REF. 6).
W -> H (IN REF. 6).
4E402BDB16DE2819 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N-LINKED (GLCNAC. . .)
N-LINKED (GLCNAC. . .)
N-LINKED (GLCNAC. . .)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         N-LINKED (GLCNAC. . .)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  N-LINKED (GLCNAC. . MISSING (IN ISOFORM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 68; DB 1; Pred. No. 9.8e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /FTId-VAR_003445.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PARAGRANULIN
                                                                                                                                                                                                                                                                             PTM: GRANULINS ARE DISULFIDE BRIDGED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GRANULIN 4.
GRANULIN 5.
GRANULIN 6.
GRANULIN 7.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACROGRANIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GRANULIN 2. GRANULIN 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ·
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; M75161; AAA58617.1; ALT_SEQ.
EMBL; X62320; CAA44196.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; AF055008; AAC09359.1; --
EMBL; BC000324; AAH00324.1; --
EMBL; BC1010577, AAH10577.1; --
PIR; A38118; GYHU.
PIR; D36698; D36698.
PIR; JC1284; JC1284.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       InterPro; IPR000118; Granulin.
Pfam; PF00396; granulin; 7.
SMART; SM00277; GRAN; 7.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   63473 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 91.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 ARRGTKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                530
531
454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2417
2496
2573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HGNC:4601; GRN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       386
593 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
Matches 13; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MIM; 138945;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CARBOHYD
VARSPLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Genew;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CHAIN
     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration hetween the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bloinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce.or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                         Gaps
01-ocr-1994 (Rel. 30, Last sequence update)
16-ocr-2001 (Rel. 40, Last annotation update)
Granulins precursor (Acrogranin) [Contains: Granulin 1; Granulin 2; Granulin 3; Granulin 4; Granulin 5; Granulin 6; Granulin 7].
                                                                                                                Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ..) (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 589;
                                                                                                                                                                                                                                      Baba T., Nemoto H., Watanabe K., Arai Y., Gerton G.L.; "Exon/introf organization of the gene encoding the mouse epithelin/granulin precursor (acrogranin)."; FEBS Lett. 322:89-94(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1DE8229C413CB787 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (GLCNAC. . .)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ;;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            POTENTIAL.
ACROGRANIN
GRANDLIN 1.
GRANDLIN 2.
GRANDLIN 3.
GRANDLIN 4.
GRANDLIN 6.
GRANDLIN 6.
GRANDLIN 6.
N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 53; DB 1;
Pred. No. 0.049;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            N-LINKED (GLCNAC
L -> R (IN REF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                    MEDLINE-93245991; PubMed-8482392;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PS00799; GRANULINS; 7. Repeat; Glycoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro; IPR000118; Granulin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     63458 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; D16195; BAA03736.1; -. EMBL; M86736; AAA37191.1; -. EMBL; X62321; CAA44197.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         71.6%;
75.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pfam; PF00396; granulin; 7.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1111111:: 11
564 RGTKCLRKKIPR 575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3 RGTKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GRAN; 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2414
2493
2568
                                                                                                   Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MGD; MGI:95832; Grn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                  [1]
SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local Similarity
Matches 9; Conser
                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                           NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       526
350
589 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
```

RESULT

셤

589 AA.

PRT;

GRN MOUSE STANDARD; F P28798; 01-DEC-1992 (Rel. 24, Created)

5 K

RESULT 2

Wed Jul

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation he European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          THEY MAY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Plowman G.D., Green J.M., Neubauer M.G., Buckley S.D., McDonald V.L., Todaro G.J., Shoyab M.;
"The epithelin precursor encodes two proteins with opposing activities on epithelial cell growth.";
J. Biol. Chem. 267:13073-13078(1992).
                                                                                                                                                                                           Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bateman A., Belcourt D.R., Bennett H.P., Lazure C., Solomon S.;
"Granulins, a novel class of peptide from leukocytes.";
Blochem. Biophys. Res. Commun. 173:1161-1168(1990).
-i- FUNCTION: GRANULINS HAVE POSSIBLE CYTOKINE-LIKE ACTIVITY. THEY MAPLAY A ROLE IN INFLAMMATION, WOUND REPAIR, AND TISSUE REMODELING.
-i- TISSUE SPECIFICITY: GBIQUITOUS, MOST ABUNDANT IN THE SPLEEN AND SEVERAL TISSUES OF EMDCRINE SIGNIFICANCE.
-i- PTM: GRANULINS ARE DISULPIDE BRIDGED.
                                                                                           Granulins precursor (Acrogranin) {Contains: Granulin 1 (Granulin 6); Granulin 7); Granulin 7 (Granulin B) (Epithelin 2); Granulin 4 (Granulin A) (Epithelin 1); Granulin 5 (Granulin C); Granulin 6 (Granulin D); Granulin 7 (Granulin E).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          G.D.;
                                                                                                                                                                                                                                                                                                                                                    Bhandari V., Giaid A., Bateman A.; "The complementary deoxyribonucleic acid sequence; tissue distribution, and cellular localization of the rat granulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE-91045907; PubMed-2236009; Shoyab M., McDonald V.L., Byles C., Todaro G.J., Plowman G. Epithellins 1 and 2: isolation and characterization of two cysteine-rich growth modulating proteins."; Proc. Natl. Acad. Sci. U.S.A. 87:7912-7916(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A., AND SEQUENCE OF 204-259 AND 278-334.
                                  01-NOV-1991 (Rel. 20, Created)
01-DEC-1992 (Rel. 24, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
¥.
588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       POTENTIAL.
ACROGRANIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              or send an email to license@isb-sib.ch)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PROSITE; PS00799; GRANULINS; 7.
Cytokine; Repeat; Glycoprotein; Signal.
PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                 Endocrinology 133:2682-2689(1993)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE-92317004; PubMed-1618805;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE=91097544; PubMed=2268320;
                                                                                                                                                                                                                                                                                                                                MEDLINE-94062640; PubMed-8243292;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE OF 204-225 AND 279-299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PIR; E36698; E36698.
InterPro; IPR000118; Granulin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; M97750; AAA16903.1; -. EMBL; X62322; CAA44198.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pfam; PF00396; granulin; 7. SMART; SM00277; GRAN; 7.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SECUENCE OF 278-328.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PIR; A36199; A36199
PIR; B36199; B36199.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ISSUE-Bone marrow;
                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                        NCBI_TaxID-10116;
                                                                                                                                                                                                                                                                                                                                                                                                                 recursor
```

```
between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This SWISS-PROT entry is copyright. It is produced through a collaboration
                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                          16-OCT-2001 (Rel. 40, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Nicotinate-nucleotide--dimethylbenzimidazole phosphoribosyltransferase
(EC 2.4.2.21) (NN.DBI PRT) (N(1)-alpha-phosphoribosyltransferase).
COBT OR DRA0240.
                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FUNCTION: CATALYZES THE SYNTHESIS OF ALPHA-RIBAZOLE-5'-PHOSPHATE FROM NICOTINATE MONONUCLEOTIDE (NAMN) AND 5,6-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE-20036896; PubMed-10567266; White O., Eisen J.A., Heidelberg J.F., Hickey E.K., Peterson J.D., Dodson R.J., Haft D.H., Gwinn M.L., Nelson W.C., Richardson D.L., Moffat K.S., Qin H., Jiang L., Pamphile W., Croshy M., Shen M., Wamathevan J.J., Lam P., McDonald L., Utterback T., Zalewski C., Makarova K.S., Aravind L., Daly M.J., Minton K.W., Fleischmann R.D. Ketchum K.A., Nelson K.E., Salzberg S., Smith H.O., Venter J.C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                dimethylbenzimidazole = nicotinate + N(1)-(5-phospho-alpha-D-
ribosyl)-5,6-dimethylbenzimidazole.
                                                                                                               (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bacteria; Thermus/Deinococcus group; Deinococci; Deinococcales;
Deinococcaceae; Deinococcus.
                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "Genome sequence of the radioresistant bacterium Deinococcus radiodurans R1.";
                                                                                                                                                                                                                                 Score 51; DB 1; Length 588;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CATALYTIC ACTIVITY: Beta-nicotinate D-ribonucleotide
                                                                                                                                                                                                   113D434F7E099B31 CRC64;
                                                                                                                            N-LINKED (GLCNAC. . S -> FP (IN REF. 2)
TK -> SB (IN REF. 4
                                                                                                                                                                         O -> T (IN REF. 4).
M -> I (IN REF. 2).
                                                                                                 (GLCNAC.
                                                                                                                                                                                                                                               Pred. No. 0.11;
                                                                                                                                                                                                                                                                                                                                                                                             365 AA.

    -i- PATHWAY: Cobalamin biosynthesis.
    -i- SIMILARITY: BELONGS TO THE COBT FAMILY.

                                                                                                                                                                                                                                                              3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            or send an email to license@isb-sib.ch)
                                                       GRANULIN
GRANULIN
GRANULIN
N-LINKED
N-LINKED
                              GRANULIN
                                             GRANULIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DIMETHYLBENZIMIDAZOLE (DMB).
                                                                                                                                                                                                     63369 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Science 286:1571-1577(1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL; AE001863; AAF12397.1;
                                                                                                                                                                                                                                 68.98;
                                                                                                                                                                                                                                                66.78;
                                                                                                                                                                                                                                                                                                        8; Conservative
                                                                                                                                                                                                                                                                                          3 RGTKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                             STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Deinococcus radiodurans.
                                                                                                                                                                                                                                                                                                                                                                                                                       16-OCT-2001 (Rel. 40, 16-OCT-2001 (Rel. 40,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q05603; 1D0V.
                                                                                                                                                                                                   588 AA;
                                                                                                                                                                                                                                               Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=1299;
58
122
204
204
278
361
38
372
372
372
307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HSSP; Q05603; 1
TIGR; DRA0240;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   raser C.M.;
                                                                                                                                                                                                                                                                                                                                                                                         COBT_DEIRA Q9RYR8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRAIN-R1;
                                                                                                                                                         CONFLICT
CONFLICT
CONFLICT
SEQUENCE
                                                                                                 CARBOHYD
                                                                                                                  CARBOHYD
                                                                                                                              CARBOHYD
                                                                                                                                                                                                                                 Query Match
                                                                                                                                              CONFLICT
                                                         PEPTIDE
PEPTIDE
               PEPTIDE
PEPTIDE
                                                                                     PEPTIDE
                                             PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                COBT_DEIRA
                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                    RESULT
                                                                                                                                                                                                                                                                                                                       윱
                                                                                                                                                                                                                                                                                                                                                                                                ö
```

```
127 RHGTRCLRHGGP 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MT2146;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Hypothetical
SEQUENCE 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bishai W.;
                                                                         YK84_MYCTU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 7
                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                      chrome mosaic nepovirus RNA2.";
Nucleic Acids Res. 17:7809-7823(1989).
-I- FUNCTION: THE PROTEIN LOCATED AT THE N-TERMINAL END OF THE NEPOVIRUS POLYPROTEIN COULD BE REQUIRED FOR NEWATODE TRANSMISSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PTM: THE RNA2 POLYPROTEIN IS CLEAVED BY AN RNA1-ENCODED PROFEASE TO YIELD THE MATURE COAT PROTEIN AND AN 84 kDa PROTEIN WHICH IS FURTHER CLEAVED INTO TWO PRODUCTS OF APPROXIMATELY 46 AND 48 kDa. SIMILARITY: TO THE RNA2 POLYPROTEIN OF OTHER NEPOVIRUSES.
                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A., AND SEQUENCE OF 814-822.
MEDLINE-90016865; PubMed-2798129;
Brault V., Hibrand L., Candresse T., le Gall O., Dunez J.;
"Nucleotide sequence and genetic organization of Hungarian grapevine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                      01-JAN-1990 (Rel. 13, Created)
01-JAN-1990 (Rel. 13, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
RNA2 polyprotein (147 kDa protein) [Contains: Coat protein; 84 kDa
                                                                                                                                                                                                                                                                                                                        Hungarian grapevine chrome mosaic virus (GCMV).
Viruses; ssRNA positive-strand viruses, no DNA stage; Comoviridae;
                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
        Pfam; PF02277; DBI_PRT; 1.
Cobalanin hiosynthesis; Porphyrin biosynthesis; Transferase;
Complete proteome.
ACT_SITE 330 BASE (BY SYMILARITY).
SEQUENCE 365 AA; 37265 MW; 81A37D3194F2EC7D CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 41; DB 1; Length 1324;
Pred. No. 16;
1; Mismatches 4; Indels
                                                                                       58.1%; Score 43; DB 1; Length 365; 81.8%; Pred. No. 1.9;
                                                                                                                1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      302C286B2EA1756A CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BLOCKED (PROBABLE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     84 KDA PROTEIN
                                                                                                                1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COAT PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               N -> D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ^-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro; IPR005054; Nepo_coat.
InterPro; IPR005305; Nepo_coat_C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Interpro: IPR005306; Nepo_coat_N. Pfam; PF03391; Nepo_coat; 1. Pfam; PF03689; Nepo_coat_C; 1. Pfam; PF03689; Nepo_coat_N; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      147804 MW;
InterPro; IPR003200; NN:DBI_PRT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; X15163; CAA33255.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 55.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           58.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Coat protein
                                                                                                   Best_Local Similarity 81.8
Matches 9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity 58.3
Matches 7; Conservative
                                                                                                                                                      STANDARD;
                                                                                                                                       2 RRGTKCLRREA 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1006 100
1324 AA;
                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=12273;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OF THE VIRUS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Polyprotein;
                                                                                                                                                                                                                             POL2_GCMV
P13026:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VARIANT
SEQUENCE
                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                             protein]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VARIANT
                                                                                                                                                                                                  RESULT 5
POL2_GCMV
ID POL2 (
SO FYW SO S
                                                                                                                                                          . 요
                                                                                                                                                                                                                                             à
```

2 RRGTKCLRREAP 13

å

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRAIN-CDC 1551 / Oshkosh;
STRAIN-CDC 1551 / Oshkosh;
Fleischmann R.D., Alland D., Eisen J.A., Carpenter L., White O.,
Peterson J., DeBoy R., Dodson R., Gwinn M.L., Haft D., Hickey E.,
Kolonay J.F., Nelson W.C., Omayam L.A., Ermolaeva M.D., Salzberg S.L.,
Delcher A., Utterback T., Weidman J., Khouri H., Gill J., Mikula A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Harris D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                  Bacteria; Actinobacteria; Actinobacteria (class); Actinobacteridae; Actinomycetales; Corynebacterineae; Mycobacteriaceae; Mycobacterium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Whole genome comparison of Mycobacterium tuberculosis clinical and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Coles. T., Brosch R., Parkhill J., Garnier T., Churcher C., Harris Gordon S.V., Eiglmeier K., Gas S., Barry C.E. III, Tekaia F., Badcock K., Basham D., Brown D., Chillingworth T., Connor R., Davies R., Devilu K., Feltwell T., Gentles S., Hamlin N., Holroyd S. Hornsby T., Jagels K., Rrogh A., McLean J., Moule S., Murphy L., Oliver S., Osbornor J., Quail M.A., Rajandream M.A., Rogers J., Rutter S., Seeger K., Skelton S., Squares S., Squares R., Sulston J.E., Taylor K., Whitehead S., Barrell B.G.; "Deciphering the biology of Mycobacterium tuberculosis from the Nature 393:537-544(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 380;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        laboratory strains.";
Submitted (APR-2001) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       l protein; Complete proteome.
380 AA; 41314 MW; D61A51A1BC8775EE CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 40; DB 1;
Pred. No. 6.8;
0; Mismatches
                                                           01-OCT-1996 (Rel. 34, Created)
16-OCT-2001 (Rel. 40, Last sequence update)
15-JUN-2002| (Rel. 41, Last annotation update)
HYDORH-LICAL protein RV2084.
RV2084 OR MT2146 OR MTCX49.23.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     147 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL; Z73966; CAA98196.1; ALT_INIT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE-98295987; PubMed-9634230;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              YD12_MYCTU STANDARD; 1
Q10620;
01-OCT-1996 (Rel. 34, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     54.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AE007064; AAK46428.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        71.48;
                                                                                                                                                                                                                                      Mycobacterium tuberculosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             308 ARRGISRGRRCAPR 321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 ARRGIKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity 71.4
Matches 10; Conservative
STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ruberculist; Rv2084; -.
                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=1773;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              YD12_MYCTU
ID YD12_M)
AC Q10620;
DT 01-OCT-
```

```
MEDLINE-96186720; PubMed-8627769;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Hypothetical protein RSc1426.
RSC1426 OR RS05266.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           52.7%;
66.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             869 RGVHILRREEPR 880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3 RGTKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SMART; SM00486; POLBC; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
[1]
SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=305;
                                                                                                                                                                 (DNA)(N)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 YE26_RALSO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DNA-binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SECUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      08XZG9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  YE26_RALSO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
 This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRAIN-CDC 1551 / Oshkosh;
Fleischmann R.D., Alland D., Eisen J.A., Carpenter L., White O.,
Peterson J., DeBoy R., Carpenter L., Haft D., Hickey E.,
Kolonay J.F., Nelson W.C., Umayam L.A., Ermolaeva M.D., Salzberg S.L.,
Delcher A., Utterback T., Weidman J., Khouri H., Gill J., Mikula A.,
                                                                                                                                                                                                               Cole S.T., Brosch K., Parkhill J., Garnier T., Churcher C., Harris D., Gordon S.V., Eiglmeier K., Gas S., Barry C.E. III, Tekaia F., Badcock K., Basham D., Brown D., Chillingworth T., Connor R., Davies R., Devlin K., Feltwell T., Gentles S., Hamlin N., Holroyd S., Hornsby T., Jagels K., Krogh A., McLean J., Moule S., Murphy L., Oliver S., Osborne J., Quall M.A., Rajandream M.A., Rogers J., Rutter S., Seeger K., Skelton S., Squares S., Squares R., Sulston J.E., Taylor K., Whitehead S., Barrell B.G.; Pociphering the biology of Mycobacterium tuberculosis from the Complete genome sequence."; Mature 393:537-544(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                      Bacteria; Actinobacteria; Actinobacteria (class); Actinobacteridae; Actinomycetales; Corynebacterineae; Mycobacteriaceae; Mycobacterium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Whole genome comparison of Mycobacterium tuberculosis clinical and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Avian adenovirus gall (strain Phelps) (Fówl adenovirus 1) (CELO). Viruses; dsDNA viruses, no RNA stage; Adenoviridae; Aviadenovirus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      52.7%; Score 39; DB 1; Length 147;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   aboratory strains.";
ubmitted (APR-2001) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mpothetical protein; Transmembrane; Complete proteome.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  147 AA; 16594 MW; A880FB972E48AE27 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
 (Rel. 34, Last sequence update) (Rel. 41, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT; 1121 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 - SIMILARITY: STRONG, TO M. LEPRAE ML1147.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pred. No
                                                                                                                                                                                                    MEDLINE-98295987; PubMed-9634230;
                                  Hypothetical protein Rv1312.
Rv1312 OR MT1352 OR MTCX373.32.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DNA polymerase (EC 2.7.7.7).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AE007008; AAK45614.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        50.08;
                                                                         Mycobacterium tuberculosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 ARRGTKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SRRGVEIISRRAPR 91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; 273419; CAA97745.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity 50.0 nes 7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Puberculist; Rv1312; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  23
                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID-10553;
                                                                                                                              NCBI_TaxID-1773;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MT1352;
                                                                                                                                                                                      STRAIN-H37RV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DPOL_ADEG1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 8
DPOL_ADEG1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
```

ð 셤

```
this SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (see http://www.isb-sib.ch/announce/or send an email to licenseeisb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This SWISS-PROT entry is copyright. It is produced through a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 s its content is in no way Usage by and for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on it use by non-profit institutions as long as its content is in no wa modified and this statement is not removed. Usage by and for commercia
                                                                                                                                 adenovirus CELO.";
J. Virol. 70:2939-2949(1996).
-i- CATALXTIC ACTIVITY: N deoxynucleoside triphosphate - N'diphosphate
                                                                                                                                                                                                                                                                                     -i- MISCELLANEOUS: THIS DNA POLYMERASE REQUIRES A PROTEIN AS A PRIMER.
-i- SIMILARITY: BELONGS TO THE DNA POLYMERASE TYPE-B FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Salanoubat M., Genin S., Artiguenave F., Gouzy J., Mangenot S., Arlat M., Billault A., Brottler P., Camus J.C., Cattolico L., Chandler M., Choisne N., Claudel-Renard C., Cunnac S., Demange N. Gaspin C., Lavie M., Moisan A., Robert C., Saurin W., Schlex T., Siguler P., Thebault P., Whalen N., Wincker P., Levy M., Weissenbach J., Boucher C.A.;
"Genome sequence of the plant pathogen Raistonia solanacearum.";
Nature 415:497-502(2002).
                                                                                  "The complete DNA sequence and genomic organization of the avian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
Chiocca S., Kurzbauer R., Schaffner G., Baker A., Mautner V.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bacteria; Proteobacteria; beta subdivision; Ralstonia group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 39; DB 1; Length 1121;
Pred. No. 30;
0; Mismatches 4; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PROSITE; PS00116; DNA_POLYMERASE_B; 1.
Transferase; DNA-directed DNA polymerase; DNA replication;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1121 AA; 129395 MW; A55B9B6A54D3BDE1 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1- SIMILARITY: BELONGS TO THE UPF0125 (RNFH) FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ralstonia solanacearum (Pseudomonas solanacearum)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 15-JUN-2002 (Rel. 41, Created)
15-JUN-2002 (Rel. 41, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       118 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE-21681879; PubMed-11823852;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; U46933; AAC54904.1; -.
InterPro; IPR002064; DNA_DOl_B.
InterPro; IPR004868; DNA_DOl_B_2.
Pfam; PF03175; DNA_DOL_B_2; I
PRINTS; PR00106; DNAPOLB.
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way
entities requires a license agreement (See http://www.isb-sib.ch/announce/
or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRAIN-C57BL/63; TISSUB-Embryo;

X RAWAI J., Shinagawa A., Shibata K., Yoshino M., Itoh M., Ishii Y.,

A Arakawa T., Shinagawa A., Shibata K., Yoshino M., Itoh M., Ishii Y.,

A Arakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S.,

A Alzawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,

Saito T., Okazaki Y., Gojobori T., Bono H., Raukawa T., Saito R.,

Radota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,

Radota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,

Rubil P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,

Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,

Blake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F.,

Brownstein M.J., Bult C., Fletcher C., Fujita M., Gariboldi M.,

Brownstein M.J., Bult C., Pletcher C., Fujita M., Gariboldi M.,

Ruschincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H.,

Lyons P., Marchionni L., Mashima J., Mazzarelli J., Mombaerts P.,

Nordone P., Ring B., Ringwald M., Rodiiguez I., Sakamoto N.,

Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,

Nyasaki, H., Toyo-oka K., Wang K.H., Weitz C., Whittaker C., Wilming L.,

Hayashi, L., Washiwa E., Kawaji H., Kohtsuki S.,

Ruschi, L., Washiwa P., Kawaji H., Kohtsuki S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  the Swiss Institute of Bioinformatics and the EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 16-OCT-2001 (Rel. 40, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Mitochondrial precursor proteins import receptor (Translocase of outer
                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -1- FUNCTION: RECEPTOR THAT ACCELERATES THE IMPORT OF ALL MITOCHONDRIAL PRECURSOR PROTEINS (BY SIMILARITY).
-1- SUBUNIT: FORMS PART OF THE RECEPTOR COMPLEX THAT CONSISTS OF AT LEAST 8 DIFFERENT PROTEINS (BY SIMILARITY).
-1- SUBCELLULAR LOCATION: Integral membrane protein. Mitochondrial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "Functional annotation of a full-length mouse cDNA collection.";
                                                                                                                                                                                                                                               ;
                                                                                                                                                                                                   Score 38; DB 1; Length 118;
Pred. No. 4.8;
                                                                                                                                                                                                                                               4; Indels
                                                          EMBL; AL646064; CAD15128.1; -.
InterPro; IPR005346; UPF0125.
Pfam: PF03658; UPF0125. 1.
Hypothetical protein; Complete proteome.
SEQUENCE 118 AA; 12743 MW; C0594E56E184E769 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    611 AA.
                                                                                                                                                                                                                                               0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            outer membrane (By similarity).
-1- SIMILARITY: CONTAINS 10 TPR REPEATS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            16-OCT-2001 (Rel. 40, Created)
                                                                                                                                                                                                     51.4%;
66.7%;
                                                                                                                                                                              100 REGLKWLRNEAP 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                  STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Nature 409:685-690(2001)
                                                                                                                                                                                                                                                                                         2 RRGTKCLRREAP 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         POMM70A OR D16WSU109E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Hayashizaki Y.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      membrane TOM70)
                                                                                                                                                                                                                                                                                                                                                                                                                                                  OM70_MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                               OM70_MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 10
  SSSEE##
$8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                     g
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           the European Bioinformatics Institute. There are no restrictions on use by non-profit institutions as long as its content is in no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Nagase T., Miyajima N., Tanaka A., Sazuka T., Seki N., Sato S., Tabata S., Ishikawa K.-I., Kawarabayasi Y., Kotani H., Nomura N.; "Prediction of the coding sequences of unidentified human genes. III) The coding sequences of 40 new genes (KIAAN081-KIAA0120) deduced by analysis of cDNA clones from human cell line KG-I.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                           Transmembrane; Repeat; TPR repeat.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 38; DB 1; Length 611;
Pred. No. 25;
5; Mismatches 2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 1; Length 648;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                     INTERMEMBRANE (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  486FB79FC4CE5B4F CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     648 AA; 70463 MW; 88F68A62D6C1CDA1 CRC64;
                                                                                                                                                                                                                       CYTOPLASMIC (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
15-JUN-2002 (Rel. 41) Last annotation update)
Hypothetical protein KIAA0084 (HA2022) (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        648 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 38; DB :
Pred. No. 27;
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TISSUE-Bone marrow;
MEDLINE-95308325; PubMed-7788527;
                                                                                                                                                                                                                                                                                                        TPR
TPR
TPR
HSSP; P53041; 1A17.
MGD; MG1:106295; D16Msu109e.
InterPro; IPR001440; TPR.
Pfam; PF00515; TPR; 10.
MART; SM00028; TPR; 10.
Mitcchondrion; Outer membrane; Tr
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        67521 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         51.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; D42043; BAA07644.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           :||| |:::: |
375 KRGTMCMQQQQP 386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ouery Match
Best Local Similarity 58...
7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2 RRGTKCLRREAP 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 ARRGTKCLRREA 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DNA Res. 2:37-43(1995).
                                                                                                                                                                                                                                                                                                        330
365
403
437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens (Human).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Hypothetical protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        611 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Y084_HUMAN
Q14699;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KIAA0084.
                                                                                                                                                                                                  RANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE
                                                                                                                                                                                                                               DOMAIN
                                                                                                                                                                                                                                                                                 REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REPEAT
                                                                                                                                                                                                                                                                                                                                                                  REPEAT
                                                                                                                                                                                                                                                                                                                                                                                               REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                          REPEAT
                                                                                                                                                                                                                                                                                                                 REPEAT
                                                                                                                                                                                                                                                                                                                                        REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                       REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Y084_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 11
     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SO THE REAL RANK OCCOUNTY OF THE RANK OCCOUNTY OF THE REAL RANK OCCOUNTY OF THE RANK OCCOUNTY OF THE REAL RANK OCCOUNTY OF THE RANK OCCOUNTY OCCOUNTY OF THE RANK OCCOUNTY OCCOUNTY OF THE RANK OCCOUNTY OCCOUNTY
```

= :: = ::

EMBL; AK012084; BAB28018.1; -

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (see http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SUBUNIT: HOMODIMER OR HOMOTETRAMER.
DEVELOPMENTAL STAGE: GERMINATING SEEDS OR MATURE LEAVES.
PTM: PHOSPHORYLATED. HOMEVER, PHOSPHORYLATION IS NOT ESSENTIAL FOR
                                                                                                                                                                                                                                                                                                       Eukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta,
Spermatophyta, Magnoliophyta, Liliopsida, Poales, Poaceae, PACC clade,
Panicoideae, Andropogoneae, Zea.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                              SEQUENCE FROM N.A., AND SEQUENCE OF 71-74; 206-212; 471-481 AND
                                                                                                          01-JUL-1993 (Rel. 26, Last sequence update)
01-JUN-1994 (Rel. 29, Last annotation update)
Sucrose-phosphate synthase (EC 2.4.1.14) (UDP-glucose-fructose-
phosphate glucosyltransferase).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -1- SIMILARITY: BELONGS TO THE GLYCOSYLTRANSFERASE FAMILY 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 1; Length 1068;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    POLY-GLY.
W; 074679B5E9AlD282 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pfam; PF00534; Glycos_transf_1; 1.
Transferase; Glycosyltransferase; Phosphorylation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                533 AA
                                                                      1068 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 38;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro; IPR001296; Glycos_transf_1.
                                                                                                                                                                                                                                                                                           STRAIN-CV. PIONEER 3184; TISSUE-Leaf;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE 1068 AA; 118575 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PATHWAY: Sucrose synthesis.
                                                                                               01-JUL-1993 (Rel. 26, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; M97550; AAA33513.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 51.4%;
Best Local Similarity 57.1%;
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           419 ARRGVSCHGRYMPR 432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 ARRGTKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STANDARD;
46 SRDGTRCLREPA 57
                                                                     STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ENZYME FUNCTION
                                                                                                                                                                                 Zea mays (Maize)
                                                                                                                                                                                                                                    NCBI_TaxID-4577;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MaizeDB; 25294;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ALG6_ARATH
ID ALG6_ARATH
                                                                   SPS_MAIZE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  日と日
                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
 셤
```

Q9FF17; 15-JUN-2002 (Rel. 41, Created)

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@ibs-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                              "Structural analysis of Arabidopsis thaliana chromosome 5. I. Sequence features of the 1.6 Mb regions covered by twenty physically assigned ploiones ": !
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Hypothetical protein; Transferase; Glycosyltransferase; Transmembrane;
                                                                                                                                                  Arabidopsis thaliana (Mouse-ear cress).
Eukaryota, Viridiphantae, Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae;
eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -1- SIMILARITY: BELONGS TO THE ALGE/ALG8 GLUCOSYLTRANSFERASE FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE-9747169; PubMed-9330910;
Sato S., Kotani H., Nakamura Y., Kaneko T., Asamizu E., Fukami M.,
Miyajima N., Tabata S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -i- PATHWAY: Ĝiycosylation.
-i- SUBCELLULAR LOCATION: Integral membrane protein. Endoplasmic
                       15-JUN-2002 (Rel. 41, Last annotation update)
Probable dolichyl pyrophosphate Man9GlcNAc2 alpha-1,3-
glucosyltransferase (EC 2.4.1.-) (Dolichyl-P-Glc:Man9GlcNAc2-PP-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 533;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 79DEC123A6387F26 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 37; DB 1;
(Rel. 41, Last sequence update) (Rel. 41, Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pred. No. 33;
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               POTENTIAL. POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                POTENTIAL. POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro; IPR004856; Alg6_Alg8. Pfam; PF03155; Alg6_Alg8; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL; AR005248; BAB09358.1; -.
EMBL; AX035066; AAK59571.1; -.
                                                                                                 dolichyl glucosyltransferase).
AT5G38460 OR MXI10.19.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61112 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  50.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            75.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; AY056364; AAL07250.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             reticulum (Potential).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DNA Res. 4:215-230(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 169
204
234
284
380
442
511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Endoplasmic reticulum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    256 KCLRRKSP 263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6 KCLRREAP 13
                                                                                                                                                                                                                                                                                                                           STRAIN-cv. Columbia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 533 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity
                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 214
264
360
422
463
491
                                                                                                                                                                                                                                            NCBI_TaxID=3702;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          similarity)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pl clones.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TRANSMEM
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TRANSMEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
     SOLUTION OF THE STANT AND SECOND CONTROL OF THE SECOND SEC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           between the Swiss Institute of Bioinformatics and the EWBL outstation the European Bioinformatics Institute. There are no restrictions on it use by non-profit institutions as long as its content is in no wa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PATHWAY: SUCTOSE SYNTHESIS.
SUBBINIT: HOMODIMER OR HOWOTETRAMER (BY SIMILARITY).
PTM: PHOSPHORILATED. HOWEVER, PHOSPHORYLATION IS NOT ESSENTIAL FOR ENZYME FUNCTION (BY SIMILARITY).
SIMILARITY: BELONGS TO THE GLYCOSYLLTRANSFERASE FAMILY 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FUNCTION: INVOLVED IN THE REGULATION OF CARBON PARTITIONING IN THE LEAVES OF PLANTS. MAY REGULATE THE SYMTHESIS OF SUCROSE AND THEREFORE PLAY A MAJOR ROLE AS A LIMITING FACTOR IN THE EXPORT C PHOTOASSIMILARES OUT OF THE LEAF.

CATALYTIC ACTIVITY: UDP-Glucose + D-fructose 6-phosphate = UDP +
                                                                                                                                                                                                                           Oryza sativa (Rice).
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;
Ehrhartoideae; Oryzeae; Oryza.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   13-DEC-1998 (Rel. 37, Last sequence update)
15-DEC-1998 (Rel. 37, Last annotation update)
Sucrose-phosphate synthase 2 (EC 2.4.1.14) (UDP-glucose-fructose-phosphate glucosyltransferase 2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ENZIME REGULATION: ACTIVITY REGULATED BY PHOSPHORYLATION AND MODERATED BY CONCENTRATION OF METABOLITES AND LIGHT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "Characterization of a rice sucrose-phosphate synthase-encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 37; DB 1; Length 1049;
Pred. No. 65;
0; Mismatches 6; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              695 698 POLY-GLU.
775 779 POLY-ARG.
1049 Aa; 116455 MW; ED862E2819Aa4B04 CRC64;
                                                                                                                         15-DEC-1998 (Rel. 37, Last annotation update)
Sucrose-phosphate synthase (EC 2.4.1.14)
(UDP-glucose-fructose-phosphate glucosyltransferase)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRAIN-cv. Indica-IR36; TISSUE-Leaf;
MEDLINE-96235138; PubMed-8666248;
Valdez-Alarcon J.J., Ferrando M., Jimenez-Moraila B.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             InterPro; IPR001296; Glycos_transf_1.
Bfam; PF00534; Glycos_transf_1; 1.
Transferase; Glycosyltransferase; Phosphorylation.
DOMAIN 22 29 PoLY-GLY.
   PRT; 1049 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT; 1081 AA.
                                                                                                     Last sequence update)
                                                                  Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; U33175; AAC49379.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  50.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     420 ARRGVSCHGREMPR 433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 ARRGIKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sucrose 6-phosphate.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STANDARD;
   STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gene 170:217-222(1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Herrera-Estrella L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=4530;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SPS2_CRAPL
004933;
                                                           15-DEC-1998
SPS_ORYSA
Q43802;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SPS2_CRAPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 15
                               DATE THE TARKET AND THE COLUMN TO THE TARKET AND THE COLUMN THE COLUMN THE TARKET AND THE COLUMN THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S E E E E E E E E E E
```

8, 2003, 16:25:06

Search completed: July Job time: 7.82051 secs

429 ARRGVNCHGREMPR 442

g

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (see http://www.isb-sib.ch/announce/or send an email to license@libersib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                          -1- SUBUNIT: HOMODÎMER OR HOMOTETRAMER (BY SIMILARITY).
-1- PTM: PHOSPHORYLAFED. HOMEVER, PHOSPHORYLATION IS NOT ESSENȚIAL FOR
ENZEME FUNCȚION (BY SIMILARITY).
-1- SIMILARITY: BELONGS TO THE GLYCOSYLFRANSFERASE FAMILY 1.
Craterostigma plantagineum.
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnollophyta; eudicotyledons; core eudicots;
Asteridae; euasterids I; Lamiales; Lamiales incertae sedis; Torenleae;
Craterostigma.
                                                                                                                                                                                                             Ingram J., Chandler J.W., Gallagher L., Salamini F., Bartels D.; *Analysis of cDNA clones encoding sucrose-phosphate synthase in relation to sugar interconversions associated with dehydration in the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Interkro; renovator, --.
Pfam; PF00534; Glycos_transf_1; 1.
Transferase; Glycosyltransferase; Phosphorylation; Multigene family.
                                                                                                                                                                                                                                                                                                                                     sucrose 6†phosphate.
ENZYME REGULATION: ACTIVITY REGULATED BY PHOSPHORYLATION AND
MODERATED BY CONCENTRATION OF METABOLITES AND LIGHT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 1081;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1081 AA; 120933 MW; DD142DC2F1A72900 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 37; DB 1;
Pred. No. 67;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            POLY-GLU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         InterPro; IPR001296; Glycos_transf_l.
                                                                                                                           SEQUENCE FROM N.A. MEDLINE-97451773; PubMed-9306694;
                                                                                                                                                                                                                                                                                                                                                                                        -!- PATHWAY: Sucròse synthesis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               50.0%;
57.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 ARRGTKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; Y11795; CAA72491.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
Matches 8; Conserv
                                                                                          NCBI_TaxID-4153;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
```

```
GenCore version 5.1.6 Copyright (c) 1993 - 2003 Compugen Ltd.
```

OM protein - protein search, using sw model

July 8, 2003, 16:17:10 ; Search time 30.1538 Seconds (without alignments) 95.665 Million cell updates/sec Run on:

US-09-824-647-7 74 Title: Perfect score: Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 1 ARRGIKCLRREAPR 14 Scoring table:

671580 seqs, 206047115 residues Searched:

671580 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

SPTREMBL\_21:\*
: sp\_archea:\*
: sp\_bacteria:\* Database :

sp\_unclassified:\*
sp\_rvirus:\* \_invertebrate: sp\_vertebrate:\* sp\_bacteriap:\* sp\_archeap:\* \_organelle: rodent: p\_mammal:\* sp\_virus:\* p\_fung1:\* -human: sp\_phage:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

											•						
	Description	Q9h8s1 homo sapten	Q9d2v3 mus musculu	Q8vjw0 mycobacteri	09xq10 hordeum vul	Q9cyq1 mus musculu	Q922p9 mus musculu	Q9wqq4 rattus norv	043729 homo sapien	Q9d603 mus musculu	Q9sn30 arabidopsis	Q93345 caenorhabdi	Q9zg90 flavobacter	Q9jpd5 rhodocyclus	Q9hna5 halobacteri	Q8qgb6 oncorhynchu	Odvavo homo gapten
							_										
																	•
	·	i !															
		s1	2V3	JWO	630	YQ1	2P9	400	29	603	N30	45	06	52	NA5	GB6	OA
1	a	9н60	060	Q8VJW0	X60	090	Q922P9	M60	0437	090	S60	0933	9260	95P	09H	080	0973
	DB	4	11	16	10	11	11	11	4	11	10	S	7	7	17		4
	% Query Match Length DB	413	589	694	78	546	546	130	429	433	1083	327	422	200	831	100	118
	& Query Match	91.9	64.9	60.1	58.1	57.4	57.4	55.4	55.4	55.4	55.4	54.1	54.1	54.1	54.1	52.7	52.7
	Score	89	48	44.5	43	42.5	42.5	41	41	41	41	40	40	40	40	39	30
	Result No.	-	7	m	4	so	9	7	æ	6	10	11	12	13	14	15	16

	Q8ymu' anabaena sp Q9nxx6 homo saplen Q8vds7 mus musculu Q9jib2 rattus norv
\$ \qquad \qqquad \qqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqq	
2 031034 11 090CP5 10 090CP5 10 090CP5 10 090VA1 10 062912 11 062912 12 090VA6 12 090VA6 13 090SP 14 090SP 16 090SP 17 090SP 18 090SP 19 090SP 10 090SP 11 090SP 11 090SP 11 090SP 11 090SP 11 090SP 11 090SP 11 090SP 11 090SP	16 Q8YMU7 4 Q9NXX6 11 Q8VDS7 11 Q9JIB2
1100 48 40 40 40 40 40 40 40 40 40 40 40 40 40	379 385 400 402
222 22 22 22 22 22 22 22 22 22 22 22 22	50.0 50.0 50.0
74444444444444444444444444444444444444	37 37 37
11 10 10 10 10 10 10 10 10 10 10 10 10 1	4 4 4 4 5 6 4 7

## ALIGNMENTS

					tomi;					ci Y.,	ıdo H.,	jawara M.,	lguch1 S.,	to K.,	Υ.,			•										0; Gaps
	ndato	purce)			Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;	Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.				Isogai T., Ota T., Hayashi K., Sugiyama T., Otsuki T., Suzuki Y.,	Shiratori A., Sudo H.,	Wagatsuma M., Hosoiri T.; Kaku Y., Kodaira H., Kondo H., Sugawara	Takahashi M., Chiba Y., Ishida S., Murakawa K., Ono Y., Takiguchi	Watanabe S., Kimura K., Murakami K., Ishii S., Kawai Y., Saito K.,	Yamamoto J., Wakamatsu A., Nakamura Y., Nagahari K., Masuho Y.,			Submitted (AUG-2000) to the EMBL/GenBank/DDBJ databases.								0E3767A44BE314EC CRC64;	DB 4; Length 413;	)024; 1; Indels
413 AA.	0000	tation			a; Ver	ini; H				ma T.,	no S.,	daira	ırakawa	Ishii	., Nag			ank/DD						4.	/	<b>A44BE</b> 3	B)	tches
PRT;	Created)	Last annotation update)			1; Craniat	s; Catarrh				t., Sugiya	H., Suga	aku Y., Ko	lda S., Mu	akami K.,	Nakamura Y		project.	EMBL/GenE		Ln.	olipaseA2.			GNKNOWN,	JUKNOWN_1.		Score 68;	Pred. No. 0.00024; 0; Mismatches 1
PRELIMINARY;	(TrEMBLrel. 16,	; ;	tein.	man).	oa; Chordata	ia; Primates		¥	ARCINOMA;	., Hayashi P	Nishikawa T., Nagai K., Sato H., Sugano S.,	soiri T.; Ka	iba Y., Ishi	ura K., Mura	amatsu A., h	Ninomiya K., Iwayanagi T.;	"NEDO human cDNA sequencing project.";	2000) to the	EMBL; AK023348; BAB14535.1;	InterPro; IPR000118; Granulin.	211; Phospho	Pfam; PF00396; granulin; 4.	GRAN; 4.	PROSITE; PS00799; GRANULINS; UNKNOWN_4.	PS00118; PA2_HIS; UNKNOWN_1.	A; 44132 MW;		llarity 92.9%; Conservative
PREI	_	2 (Tre	.54 pro	ns (Hu	Metaz	Euther	4006-	N MON	RIAN C	Ota 1	T., No	M., E	¥., C	3., Kin	r., wa)	Y IWE	ID CDNZ	(AUG-	3348;	IPR000	IPR001	396; ç	0277;	S00795	500118	413 AA;	,	Cons
LT 1 S1 Q9H8S1	01-MAR-2001	01-JUN-2002	OVARC1001154 protein.	Homo sapiens (Human)	Eukaryota;	Mammalia;	NCBI_TaxID-9606;	[I] SEOUENCE FROM N.A.	TISSUE-OVARIAN CARCINOMA;	Isogai T.,	Nishikawa	Wagatsuma	Takahashi	Watanabe 5	Yamamoto j	Ninomiya R	"NEDO huma	Submitted	EMBL; AKO	InterPro;	InterPro;	Pfam; PFOC	SMART; SM00277; GRAN; 4.	PROSITE; E	.PROSITE; F	SEQUENCE	Query Match	Best Local Similarity Matches 13; Conserv
RESULT Q9H8S1 ID Q	물물	ដីដ	DE	os	8	8	ŏ	N W	2	RA	Æ	R	æ	æ	æ	RA	RI	꿆	DR	DR	DR	DR	DR	DR	DR	S	ā	Ma Ma

1 ARRGIKCLRREAPR 14

ö

ŏ

AARGIKCLRREAPR 399

셤

```
Arakwa T., Shinagawa A., Shibata K., Yoshino M., Itoh M., Ishii Y., Arakwa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S., Arakwa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S., Alzwa M., Nishi K., Kiyoswa H., Kondo S., Tamanaka I., Saito T., Okazaki Y., Gojobori T., Bono H., Raukwa T., Saito R., Matsuda H.A., Ashburner M., Batalov S., Casavant T., Redota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T., A. Kuchi P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J., Schriml L.M., Saubli F., Suzuki R., Tomita M., Wagner L., Washio T., Sakai K., Okido T., Furuno M., Aonn H., Baldarelli R., Barsh G., Blake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F., Brownstein M.J., Bult C., Fletcher C., Fujita M., Gariboldi M., Gustincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N. H., Lyons P., Marchionni L., Mashima J., Mazzarelli J., Mombaerts P., Nordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N., Sabaki H., Toyo-oka K., Wang K.H., Weitz C., Whittakar C., Walming L., Washima Y., Rawahi H., Toyo-oka K., Wang K.H., Weitz C., Mittakar C., Walming L., Harsehiari, V., Kawahi H., Kohtsuki S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Actinomycetales; Corynebacterineae; Mycobacteriaceae; Mycobacterium.NCBI_raxID=1773;
                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
NCBL_raxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Functional annotation of a full-length mouse cDNA collection.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       64.9%; Score 48; DB 11; Length 589; ilarity 72.7%; Pred. No. 1.5; Conservative 2; Mismatches 1; Indels
                                                                                                                                                                         01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
Adult male kidney CDNA, RIKEN full-length enriched library,
clone:0610012H06, full insert sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bacteria; Firmicutes; Actinobacteria; Actinobacteridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PROSITE; PS00799; GRANULINS; 7.
PROSITE; PS00118; PA2_HIS; UNKNOWN_1.
SEQUENCE 589 AA; 63405 MW; IDE8229C413CA292 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Last sequence update)
Last annotation update)
                                                                        589 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 694 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro; IPR001211; PhospholipaseA2.
Pfam; PF00396; granulin; 7.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Created)
                                                                                                                                        Created)
                                                                PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRAIN-C57BL/6J; TISSUE-KIDNEY;
MEDLINE-21085660; PubMed-11217851;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; AK018744; BAB31384.1; -. MGD; MGI:95832; Grn.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            InterPro; IPR000118; Granulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-MAR-2002 (TrEMBLEEL 20, 01-MAR-2002 (TrEMBLEEL 20, 01-JUN-2002 (TrEMBLEEL 21, PPE family protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mycobacterium tuberculosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRELIMINARY;
                                                                    PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nature 409:685-690(2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3 RGTKCLRREAP 13
                                                                                                                                                                                                                                                                                                                                                      musculus (Mouse).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
8; Conserve
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Hayashizaki Y.;
                                                                                                                                     01-JUN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q8VJW0
                                                                    Q9D2V3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MT1857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 3
RESULT
Q9D2V3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OBVOWO
ID OB
AC OB
DT OD
DT OD
DT OD
OS MY
OC AC
                                                                    SO BREEF BRE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       õ
```

```
Fleischmann R.D., Alland D., Eisen J.A., Carpenter L., White O., Peterson J., DeBoy R., Dodson R., Gwinn M.L., Haft D., Hickey E., Kolonay J.F., Nelson W.C., Omayam L.A., Ermolaeva M.D., Salzberg S.L., Deicher A., Utterback T., Weidman J., Khouri H., Gill J., Mikula A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Hordeum vulgare (Barley).
Bukaryota, Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Pooideae;
Triticeae; Hordeum.
                                                                                                                        Whole genome comparison of Mycobacterium tuberculosis clinical and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mueller J., Aeschbacher R.A., Sprenger N., Boiler T., Wiemken A. "Carbohydrate-mediated regulation of two key enzymes of fructan synthesis in barley (Hordeum vulgare L.cv. Baraka) leaves."; Submitted (MAY-1999) to the EMBL/GenBank/DDBJ databases. EMBL, AJ238715; CAB45560.1;
                                                                                                                                                                                                                                                                                                                                                                                                      ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                             Length 694;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 43; DB 10; Length 78;
Pred. No. 1.8;
                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                        INCETTO, ALTONOMICAL PERSONAL DIRENOMICAL PROSITE; PS00449; ATPASE_A; UNKNOWICAL PROSITE; PS00449; ATPASE_A; UNKNOWICAL PS0044990A07359 CRC64; CRONTENCE 694 AA; 73206 MW; 2FDAD94290A07359 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BC4BF1DB9BE10AD0 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                        Score 44.5; DB 16;
Pred. No. 7.7;
2; Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRAIN-CV. BARAKA; TISSUE-PRIMARY LEAF BLADES;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 78 A.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         546 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pred. No. 1.8; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sucrose-phosphate synthase 1 (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                                                                           InterPro; IPR000568; ATPsynt_Asub.
InterPro; IPR000030; Microbac_PPE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        05-701;
01-JUN-2001 (TEMBLEEL 17,
01-JUN-2001 (TEMBLEEL 17,
01-JUN-2002 (TEMBLEEL 21,
3930401K13R1k protein.
                                                                                                                                                                                                                                                                                                                                                             60.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-NOV-1999 (TrEMBLrel. 12, 01-NOV-1999 (TrEMBLrel. 12, 01-NOV-1999 (TrEMBLrel. 12,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8821 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      58.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61.5%;
                                                                                                                                                                                                                                                                                                                                                                                   69.28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDC 1551 / OSHKOSH;
                                                                                                                                                                                                                                                                                                                                                                                                                                                2 RRGTKCL-RREAP 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2 RRGTKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 RRGVSCYGREMPR 13
                                                                                                                                                                                                                                                                                                                                                                                                      9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          78 AA;
                                                                                                                                                                                                                                                                                                                                                                                Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SECUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=4513;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3930401K13RIK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NON TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 09xGJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         09CY01
                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             09XGJ0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
```

59715 MW; F5D2090DE1F64723 CRC64;

```
546 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRAIN-SD;
SEQUENCE
                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  043729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            043729
                                                                                                                                                                                                                                                                                                                                                                                         Q9WUQ4;
                                                                                      Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 8
043729
                                                                                                                                                                                                                                                                                                      RESULT 7
Q9WUQ4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                     q
  g
                                                                                                       SEQUENCE FROM N.A.

C STRIALNE-21085660; TISSUE-EMBRYO;

K RAWAI J., Shinagawa A., Shibata K., Yoshino M., Itoh M., Ishii Y.,

K RAWAI J., Shinagawa A., Shibata K., Yoshino M., Itoh M., Ishii Y.,

A RARAWA T., Hara A., Fukunishi Y., Kondo S., Yamanaka I.,

A Alzawa K., Izawa M., Nishi K., Kiyosawa H., Raukawa T., Saito R.,

Saito T., Owazaki Y., Ashburner M., Batalow S., Casawant T.,

A Radota K., Matsuda H.A., Ashburner M., Batalow S., Casawant T.,

A Ruchl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,

Ruchl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,

Ruchl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,

Ruchl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,

Sakai K., Okido I., Furuno M., Aono H., Baldarelli R., Barsh G.,

Blake J., Bult C., Fletcher C., Fujita M., Gariboldi M.,

Brownstein M.J., Bult C., Fletcher C., Fujita M., Gariboldi M.,

Lyons P., Marchioni L., Mashima J., Mazzarelli J., Mombaerts P.,

Lyons P., Marchioni L., Mashima J., Mazzarelli J., Sakamoto N.,

Sabali U., Sakai W., Schriguez I., Sakamoto N.,

Sabali U., Sakan V., Schring L., Richia J., Sakamoto N.,

Sabali U., Sakan V., Schring L., Sakamoto N.,

Sabali U., Sakam V., Schring L., Schamoto N.,

Sabali U., Sakam V., Schring L., Sakamoto N.,

Sabali V., Sakan V., Schring L., Schamoto N.,

Sabali V., Sakan V., Schring L., Schamoto N.,

Sabali V., Sakan V., Schring L., Sakamoto N.,

Sabali V., Sakan V., Schamoto N.,

Sabali V., Sakan V., Schamoto N.,

Sabali V., Sakan V., Schamoto N.,

Sabali V., Sakan V., Sakan V., Sakan V.,

Sabali V., Sakan V., Sakan V., Sakan V.,

Sakan V., Sakan V., Sakan V., Sakan V.,

Sakan V., Sakan V., Sakan V., Sakan V.,

Sakan V., Sakan V., Sakan V., Sakan V., Sakan V.,

Sakan V., Sakan V., Sakan V., Sakan V., Sakan V., Sakan V., Sakan V., Sakan V., Sakan V., Sakan V., Sakan V., Sakan V., Sakan V., Sakan V.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F., Suzuki H., Toyo-oka K., Wang K.H., Weitz C., Whittaker C., Wilming L. Wynshaw-Boris A., Yoshida K., Hasegawa Y., Kawaji H., Kohtsuki S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
NCBI_TaxID=10090;
  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Functional annotation of a full-length mouse cDNA collection. ";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 546;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Submitted (APR-2001) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     59744 MW; B3AC1562477ABC1F CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     546 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         57.4%; Score 42.5; E
52.9%; Pred. No. 14;
tive 4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       InterPro; IPR001744; 6PGD.
InterPro; IPR000637; AT_hook.
InterPro; IPR000313; PWWP_domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               InterPro; IPR000637; AT_hook.
InterPro; IPR000313; PWWP_domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pfam; PF02178; AT_hook; 1.
Pfam; PF03446; NAD_binding_2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GD; MGI:1921272; 3930401K13R1K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Jam; PF02178; AT_hook; 1.
Pfam; PF03446; NAD_binding_2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; BC006893; AAH06893.1; -.
MGD; MGI:1921272; 3930401K13Rik.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | ||:|||:|
152 ADRGSKCLKRAQEQSPR 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ZMBL; AK014456; BAB29363.1; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 ARRGTKCLRR---EAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-DEC-2001 (TrEMBLrel. 19, 01-DEC-2001 (TrEMBLrel. 19, 01-JUN-2002 (TrEMBLrel. 21,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SMART; SM00384; AT_hook; 1.
SMART; SM00293; PWWP; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RIKEN CDNA 3930401K13 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  InterPro; IPR001744; 6PGD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mature 409:685-690(2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PF00855; PWWP; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  546 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                      NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3930401K13RIK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Strausberg R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0922P9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q922P9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pfam;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           a
     SON SERVICE SE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         å
```

```
ï
                                                                                                                                                                                                                                                                                                                                              Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                      3;
  DB 11; Length 546;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 130;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Burgess J.;
Burgess J.;
Submitted (DEC-1999) to the EMBL/GenBank/DDBJ databases.
EMBL, 297055, CAB09789.1; -.
InterPro; IPR002641; Patatin.
Pfam; PF01734; Patatin; 1.
Pfam; PF01734; Patatin; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Protease.
SEQUENCE 130 AA; 14017 MW; A630BA3FCE3A9D9D CRC64;
                                                                                                                                                                                                                                                                       01-NOV-1999 (TrEMBLrel. 12, Last sequence update) 01-JUN-2001 (TrEMBLrel. 17, Last annotation update) Secretory leukocyte protease inhibitor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 41; DB 11;
Pred. No. 6.9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             429 AA
Score 42.5; Di
Pred. No. 14;
4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PROSITE; PS00317; 4_DISULFIDE_CORE; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-JUN-1998 (TIEMBLREI. 06, Created)
01-JUN-1998 (TIEMBLREI. 06, Last seque
01-JUN-2002 (TIEMBLREI. 21, Last annot
DJ388M5.4 (putative GS2 like protein).
                                                                                                                                                                                                                                                      01-NOV-1999 (TrEMBLrel. 12, Created)
01-NOV-1999 (TrEMBLrel. 12, Last seq
01-JUN-2001 (TrEMBLrel. 17, Last anno
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
                                                                           1 'ARRGTKCLRR---EAPR 14
| ||:||:| ::||
152 ADRGSKCLKRAQEQSPR 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               InterPro; IPR002221; WAP.
Pfam; PF00005; Wap; 2.
PRINTS; PR00003; 4DISULPHCORE.
Probom; PD001224; WAP; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           55.4%;
57.4%;
ilarity 52.9%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11: :11:11 1
38 ARKPAQCIKREKP 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 55.4 Best Local Similarity 53.8 Matches 7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 ARRGTKCLRREAP 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRELIMINARY;
                                                                                                                                                                                                                    PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens (Human).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; WAP;
                Local Similarity
nes 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SM00217
```

```
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C36B1.11 protein.
                                                                                                               NCBI_TaxID=3702;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID-6239;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Lennard
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           092G90;
092G90;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  093345
093345;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 11
093345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  065260
                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              e S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Arakawa T., Shinagawa A., Shibata K., Yoshino M., Itoh M., Ishii Y., Arakawa T., Hara A., Eukunishi Y., Konno H., Adachi J., Fukuda S., Arakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S., Alio T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R., Asato T., Okazaki T., Bono H., Rasukawa T., Saito R., Matsuda H.A., Ashburner M., Batalov S., Casavant T., Radota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T., Ruchl P., Lewis S., Matsuo Y., Nikaido I., Resole G., Quackenbush J., Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G., Borrimi L., Satubli F., Suzuki R., Tomita M., Gariboldi M., Blake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F., Bronstein M.J., Bult C., Fletcher C., Fujita M., Gariboldi M., Gustincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H., Kanstone P., Rarchonni L., Mashima J., Mazzarelli J., Mombaerts P., Nordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N., Schoch K.-F., Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F., Whyshaw-Bootis A., Yoshida K., Hasegawa Y., Kawaji H., Kohtsuki S., Marsareli S., Human, S., Marsareli S., Kawaji H., Kohtsuki S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                      ö
                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mus musculus (Mouse).
Sukaryota: Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
NCBI_raxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       'Functional annotation of a full-length mouse cDNA collection.";
                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 41; DB 11; Length 433;
Pred. No. 21;
2; Mismatches 1; Indels
                              Score 41; DB 4; Length 429;
Pred. No. 21;
                                                                                      1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pfan; PP01734; Patatin; 1.
PROSITE; PS00294; PRENILATION; UNKNOWN_1.
SEQUENCE 433 AA; 48423 MW; 05366ECC8E129A0E CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-MAY 2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-MAR-2002 (TrEMBLrel. 20, Last annotation update)
Sucrose-phosphate synthase-like protein (EC 2.4.1.14).
F28M11.40 OR AT4G10120.
Arabidopsis thaliana (Mouse-ear cress).
                                                                                                                                                                                                                                                                                                                                                                                                             Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                               PRT; 433 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT; 1083 AA.
                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                 Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRAIN-C57BL/6J; TISSUE-HEAD;
MEDLINE-21085660; PubMed-11217851;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MGD; MGT:1923022; 4833426H19Rik.
InterPro; IPR002641; Patatin.
InterPro; IPR001230; Prenyl_site.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Nature 409:685-690(2001).
EMBL; AK014771; BAB29543.1; -
                                                                                                                                                                                                                                                                                                                                                                                                  01-JUN-2001 (TrEMBLrel. 17, 01-JUN-2002 (TrEMBLrel. 21,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              55.4%;
                                                                                                                                                                                                                                                                                                                                                                           -JUN-2001 (TrEMBLrel. 17,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       70.0%;
Query Match
Best Local Similarity 70.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local Similarity 70.0
Matches 7; Conservative
                                                                                                                                                                                                                                                                                                                            PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRELIMINARY;
                                                                                                                           5 TKCLRREAPR 14
                                                                                                                                                               1:111: 111
28 TECLRORAPR 37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5 TKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1:111: 111
28 TQCLRQRAPR 37
                                                                                                                                                                                                                                                                                                                                                                                                                                                          4833426H19R1K protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Hayashizaki Y.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4833426H19RIK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q9SN30
Q9SN30;
                                                                                                                                                                                                                                                                                                                         Q9D603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 10
                                                                                                                                                                                                                                                                       RESULT 9
                                                                                                                                                                                                                                                                                             Q9D603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                09SN30
                                                                                                                                      ð
                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                     SO DE RESERVE RESERVE DE RESERVE 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OSEPTION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      å
```

```
Gaps
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnollophyta; eudicotyledons; core eudicots; Rosidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida; Rhabditoidea;
Rhabditidae; Peloderinae; Caenorhabditis.
                                                                                              SEQUENCE FROM N.A.
Bevan M., Murphy G., Ridley P., Hudson S., Bancroft I., Mewes H.W.,
Mayer K.F.X., Lemcke K., Schueller C.;
Submitted (MAR-1999) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                               score 41; DB 10; Length 1083;
Pred. No. 51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Genome sequence of the nematode C.elegans: A platform for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 327;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                         122688 MW; EFC126FCA2137BB1 CRC64;
                                                                                                                                                                                                                                                                                             EU Arabidopsis sequencing project;
Submitted (SEP-1999) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Submitted (SEP-1996) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             investigating biology.";
Science 282:2012-2018(1998).
EMBL: 280215; CAB02276.1; -.
SEQUENCE 327 AA; 37139 WW; BF592D9F0A2FA022 CRC64;
                        Spermatophyta; Magnollophyta; eudicotyledons; core e
eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 40; DB 5;
Pred. No. 25;
; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               327 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   422 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
MEDLINE-99069613; PubMed-9851916;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             54.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              55.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-FEB-1997 (TrEMBLES 02, 01-JAN-1998 (TrEMBLES 05, 01-DEC-2001 (TrEMBLES 19,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                468 RRGVSCLGRYMPR 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              :|| |:|||:|
274 SRRFEMCIRRESP 286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ouery Match
Best Local Similarity 53.00
7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2 RRGTKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 ARRGIKCLRREAP 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Caenorhabditis elegans.
```

```
Menin L., Yoshida M., Jaquinod M., Nagashima K.V., Matsuura K.,
Parot P., Vermeglio A.;
                        MEDLINE-20031519; PubMed-10563807;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID-64091;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MCM OR VNG2181G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               09HNA5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       O9HNA5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     09HNA5
                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          mechanisms and effects (Proceedings of the 11th international congress on photosynthesis), pp.4:2889-2892, Kluwer Academic Publishers,
                                                                                                          Bacteria; CFB group; Flavobacteria; Flavobacteriaceae; Flavobacterium.
NCBL_TaxID-81421;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Nagashima K.V., Matsuura K., Ohyama S., Shimada K., Brimary structure and transcription of genes encoding B870 and photosynthetic reaction center apoproteins from Rubrivivax
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRAIN-IL144;
Nagashima K.V., Shimada K., Matsuura K.;
Phylogenetic analysis of photosynthetic genes of Rhodocyclus gelatinosus: Possibility of horizontal gene transfer in purple bacteria.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                             MEDLINE-99051328; PubMed-9831650;
Leng L., Zhu A., Zhang Y., Hurst R., Goldstein J.;
"Cloning, functional expression and purification of endo-beta-
galactosidase from Flavobacterium keratolyticus.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Igarashi N., Shimada K., Matsuura K., Nagashima K.V.; "Photosynthetic gene cluster in purple bacterium, Rubrivivax
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rhodocyclus gelatinosus (Rhodopseudomonas gelatinosa).
Bacteria; Proteobacteria; beta subdivision; Comamonadaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 422;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1; Indels
                                                                                                                                                                                                                                                                        Gene 222:187-194(1998).
EMBL; AF083896; AAD04036.1; -.
InterPro; IPR000757; Glyco_hydro_16.
InterPro; IPR000757; Glyco_hydro_16.
Ffam; PF0218; CBM_4-9; 1.
Pfam; PF00722; Glyco_hydro_16; 1.
SEQUENCE 422 AA; 45783 MW; E072456A740D14AC CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-OCT-2000 (TrEMBLrel. 15, Created)
01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
01-MAY-1999 (TrEMBLrel. 10, Created)
01-MAY-1999 (TrEMBLrel. 10, Last sequence update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 40; DB 2;
Pred. No. 32;
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  500 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               J. Biol. Chem. 269:2477-2484(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE-94132007; PubMed-8300574;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Photosyn. Res. 36:185-191(1993)
                                                                  Endo-beta-galactosidase.
Flavobacterium keratolyticus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                        54.1%;
77.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     319 ARTGTKCIR 327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (eds.);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 ARRGIKCLR 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
Matches 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Exopolyphosphatase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Dordrecht (1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=28068;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Photosynthesis:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gelatinosus.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gelatinosus.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRAIN-IL144;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (In) Garab G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRAIN-IL144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Rubrivivax.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      09JPD5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                29JPD5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 13
Q9JPD5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DER RESERVANCE OF THE SERVENCE OF THE SERVENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
```

```
MEDLINE-20504483; PubMed-11016950;
WEDLINE-20504483; PubMed-11016950;
WA W.V., Kennedy S.P.; Wahairas G.G., Berquist B., Pan M.,
Na Watzell S., Weir D., Hall J., Dahl T.A., Weltl R., Goo Y.A.,
Swartzell S., Weir D., Hall J., Dahl T.A., Weltl R., Goo Y.A.,
Leithauser B., Keller K., Cruz R., Danson M.J., Hough D.W.,
Maddocks D.G., Jablonski P.E., Krebs M.P., Angevine C.M., Dale H.,
Isenbarger T.A., Peck R. R., Pohlschroder M., Spudich J.L., Jung R.-H.,
Alam M., Freitas T., Hou S., Daniels C.J., Dennis P.P., Omer A.D.,
Ebhardt H., Lowe T.M., Liang P., Riley M., Hood L., DasSarma S.;
"Genome sequence of Halobacterium species NRC-1.";
"Genome sequence of Halobacterium species NRC-1.";
"Genome sequence of Halobacterium species NRC-1.";
"Rati. Acad. Sci. U.S.A. 97:12176-12181(2000).
R HSSP; P72065; JAM2.
R HSSP; P72065; JAM2.
R InterPro; IPR003586; Hedgehog_hintc.
R InterPro; IPR002108; MCM.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                              Gaps
*Dark aerobic growth conditions induce the synthesis of a high midpoint potential cytochrome c8 in the photosynthetic bacterium Bubrivity gelatinosus.*;

EMBL: AB034704; BAA94021.1;

EMBL: AB034704; BAA94021.1;

PinterPro: IPR003859; Ppx.GppA.

Pfam; PF02541; Ppx-GppA: 1.

SEQUENCE 500 AA; 54839 WW; 4D301D723A243DEA CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ;
                                                                                                                                                                                                                                                                                                                                        ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      54.1%; Score 40; DB 17; Length 831; 66.7%; Pred. No. 60; 3; Indels iive 1; Mismatches 3; Indels
                                                                                                                                                                                                                                                                                DB 2; Length 500;
                                                                                                                                                                                                                                                                                                                                           3; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Cell division; Complete proteome.
SEQUENCE 831 AA; 90593 MW; 84A805B091676970 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Halobacterium sp: (strain NRC-1).
Archaea; Euryarchaeota; Halobacteria; Halobacteriales;
Halobacteriaceae; Halobacterium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PROSITE; PS00847; WCM_1; UNKNOWN_1.
PROSITE; PS50051; MCM_2; 2.
PROSITE; PS00881; PROTEIN_SPLICING; UNKNOWN_1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  831 AA.
                                                                                                                                                                                                                                                                            Score 40; DB 2; Pred. No. 37; 2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MCM / cell division control protein 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-MAR-2001 (TrEMBLrel. 16, Created)
                                                                                                                                                                                                                                                                                54.1%;
61.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-MAR-2001 (TrEMBLrel. 16, 01-MAR-2002 (TrEMBLrel. 20,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            || || :|||||
338 RRATKVWKREAP 349
                                                                                                                                                                                                                                                Ouery Match F Best Local Similarity 61...
Best Local Similarity 61...
                                                                                                                                                                                                                                                                                                                                                                                                   2 RRGTKCLRREAPR 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                               61 ORGLECLRRFAAR 73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pfam; PF00493; MCM; 1.
ProDom; PD001041; MCM; 2.
SMART; SM00305; HintC; 1.
SMART; SM00306; HintN; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity 66.7
Les 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2 RRGTKCLRREAP 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SMART; SM00350; MCM; 1.
```

```
RESULT 15
080GB6
ID 080GB6
ID 080GB6
ID 080GB6
ID 080GB6
ID 01-JUN-2002 (TrEMBLrel. 21, Created)
DT 01-JUN-2002 (TrEMBLrel. 21, Last sequence update)
DE VHSV-induced protein-8.
OS Oncorhynolus mykiss (Rainbow trout) (Salmo gairdneri).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleosten;
OC Actinopterygii; Neopterygii; Teleostei; Euteleostei;
CC Actinopterygii; Salmoniformes; Salmonidae; Oncorhynchus.
OC NCBL_TAXID-8022;
NN (1)
RP SEQUENCE FROM N.A.
RA Benmansour A., Boublnot P., Vaghefi N., O'Farrell C.;
R Global Survey of Transcript Expression in Rainbow Trout Leukocytes
RT Reveals a Major Contribution of Interferon Responsive Genes in the
R Early Response to a Rhabdovirus Infection. ";
Submitted (FEB-2002) to the EMBL/GenBank/DDBJ databases.
RM EMBL; AF488528; AAM18467.1;
R SEQUENCE 100 AA; 11203 MM; 8CB8F4FC779E5DIF CRC64;
```

Search completed: July 8, 2003, 16:28:05 Job time: 33.1538 secs

Gaps

ö

Length 100;

52.7%; Score 39; DB 13; 63.6%; Pred. No. 13; tive 1; Mismatches 3

Query Match 52.7 Best Local Similarity 63.6 Matches 7; Conservative

o d